

AMERICAN BEE JOURNAL

45th Year.

CHICAGO, ILL., DEC. 21, 1905.

No. 51.



To My Wife in Heaven

BY REV. L. L. LANGSTROTH

Wife of my youth—I dream of thee,
Arrayed in bridal form;
I hold in mine thy trusting hand—
Hail! happy marriage morn!

To God we vow our glad "I will"—
Thy soft, responsive voice—
Of twain made one by wedded bands—
And I, with thee, rejoice.

Sweet, loving wife—God's gracious gift—
And art thou all my own?
This plighted hand I'll closer clasp—
Dear Lord! I wake alone.

Ah! silent lips, whose law of love
So gently swayed my will,
When trusting in thee, heart to heart,
We were united still.

Weeping lasts but a night, dear wife;
Joy cometh with the light;
But for a moment darkened days,
Then where there is no night,

Both shall be present with the Lord,
Grievings and partings past;
Soul knit to soul by Heavenly bands
While lengthening ages last.





PUBLISHED WEEKLY BY

GEORGE W. YORK & COMPANY

334 Dearborn Street, Chicago, Ill.

IMPORTANT NOTICES

THE SUBSCRIPTION PRICE of this Journal is \$1.50 a year, in the United States, Canada, and Mexico; all other countries in the Postal Union, 50 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec 15" on your label shows that it is paid to the end of December.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your wrapper-label, which shows that the money has been received and credited.

ADVERTISING RATES will be given upon application.

National Bee-Keepers' Association

Objects of the Association

- 1st.—To promote the interests of its members.
- 2d.—To protect and defend its members in their lawful rights.
- 3d.—To enforce laws against the adulteration of honey.

Annual Membership Dues, \$1.00

General Manager and Treasurer—N. E. FRANCE, Platteville, Wis.

If more convenient, Dues may be sent to the publishers of the American Bee Journal.

The Honey-Producers' League

(INCORPORATED)

OBJECTS:

1. To create a larger demand for honey through advertising.
2. To publish facts about honey, and counteract misrepresentations of the same.

MEMBERSHIP DUES

1. Any bee-keeper may become a member by paying to the Manager an annual fee of \$1.00 for each 20 (or fraction of 20) colonies of bees (spring count) he owns or operates.
2. Any honey-dealer, bee-supply dealer, bee-supply manufacturer, bee-paper publisher, or any other firm or individual, may become a member on the annual payment of a fee of \$10, increased by one-fifth of one (1) percent of his or its capital used in the allied interests of bee-keeping.

GEORGE W. YORK, Manager,
334 Dearborn St., CHICAGO, ILL.

"The continuous advertiser gets the bulk of the business, because others are not advertising, and he is."



H. M. ARND,
Mgr.

BEESWAX WANTED—26c cash, or 28c when taking Bee-Supplies in exchange—delivered here.
7 PERCENT DISCOUNT IN DECEMBER on Bee-Supplies

DITTMER'S FOUNDATION THE BEST MADE

Retail, Wholesale and Jobbing.

Owes its REPUTATION entirely to its MERITS, and our PERSISTENT EFFORTS to MAKE the BEST and KEEP it the BEST.

It is TOUGH, CLEAR, and PERFECTLY TRANSPARENT, has the NATURAL SWEET ODOR of PURE WAX, and the COLOR of the BRIGHTEST and LIGHTEST LEMON and ORANGE.

We make a SPECIALTY of WORKING WAX into FOUNDATION for CASH, by the TENS, HUNDREDS and THOUSANDS of POUNDS, and we are in the Best Shape to attend to all orders promptly, our capacity being 1500 pounds daily.

FULL and COMPLETE LINE of SUPPLIES, and the BEST ONLY.

Do not fail to write for SAMPLES of our Foundation, Descriptive Catalog, PRICES and DISCOUNTS, stating Quantity of Foundation wanted. Wax to be Worked, and List of other Supplies, and Prices will be accordingly. Beeswax always wanted.

E. GRAINGER & Co., Toronto, Ontario
THE BEE AND HONEY CO., Beeville, Texas
E. H. TAYLOR, Welwyn, Herts, England
W. D. SOPER, Jackson, Michigan

Agents for Canada

Texas

Great Britain

Michigan

Mention Bee Journal when writing.

GUS DITTMER, Augusta, Wis.

Smokers at Wholesale

for a short time only. Hives, Sections, Foundation, and all Bee-Supplies at bottom prices. Circular free. If you rear Queens for sale mention the fact when writing.

49A3t ARTHUR RATTRAY, Almont, Mich.

Mention Bee Journal when writing.

Now is the Time to Order

Your Bee-Hives, Sections, Shipping-Cases, Berry Boxes, and Crates for the coming season. By sending us a list of goods wanted, we can save you money.

SHEBOYGAN FRUIT BOX CO.
35A18t SHEBOYGAN, WIS.

LAST CALL FOR NAMES TO ENTER ON OUR MAILING LIST FOR OUR NEW BEE-SUPPLY CATALOG

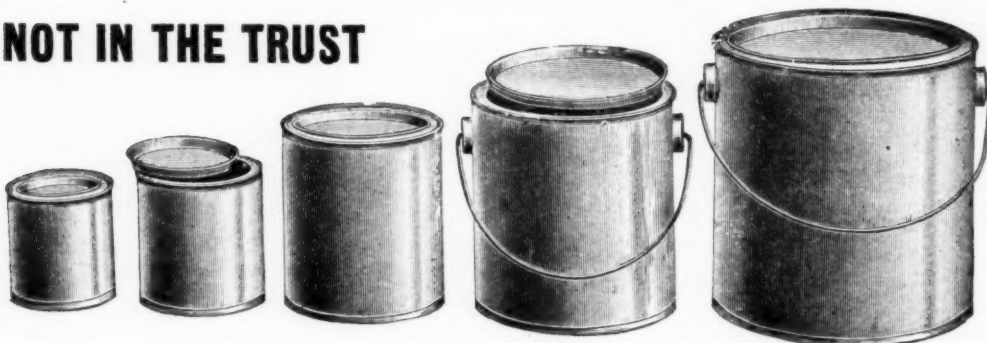
This Catalog is better than ever. It is valuable, not merely for the listing of Supplies and the economy in prices, but also for the valuable hints to bee-keepers contained therein.

This Catalog has been nearly a year in preparation, and as a handy book for the average bee-keeper it has no equal. Send your name in at once; we begin mailing right after Jan. 1st.

In the meantime write us for prices on any Supplies that you may want. Better still, let us quote you prices for any delivery on next summer's Supplies. We can do work cheaper at this time of the year than is possible during the rush season.

JOHN DOLL & SON, Power Bldg., Minneapolis, Minn.

NOT IN THE TRUST



For High-Grade
Cans

Prices Always
the Lowest

Write for Prices,
Stating Quantity
Wanted

Friction Top Cans for Honey and Syrup

Prompt shipment and careful attention given to all orders. Special prices to members of the Bee-Keepers' Associations.

Mention Bee Journal when writing.

Made by

CANNERS CAN CO., 1035 W. 47th Street, CHICAGO, ILL.

"DADANT'S FOUNDATION"

—AND—

BEE-SUPPLIES

Revised Prices on Foundation

IN LOTS OF

NAME OF GRADE	1-lb.	5-lbs.	10-lbs.	25-lbs.	50 lbs.
Medium Brood	55	53	51	49	48
Light Brood	57	55	53	51	50
Thin Surplus	62	60	58	56	55
Extra Thin Surplus	65	63	61	59	58

DISCOUNTS for Early Cash Orders

During	September	10 percent
"	October	9 "
"	November	8 "
"	December	7 "
"	January	6 "
"	February	4 "
"	March	2 "

Beeswax Wanted at all Times.

DADANT & SONS, Hamilton, Ill.

BEE-SUPPLIES

Everything the bee-keeper needs. Distributing house for Lewis' Goods at Factory Prices. Now is the time to buy for next season.

**Cash Orders for regular Supplies before January,
7 percent Discount.**

FINE EXTRACTED HONEY in cans or barrels. The best the world can produce. Samples 8 cents, to pay postage and packing. How much can you use? Prices quoted quick on the quantity you mention.

We buy **BEESWAX** at all times in the year. Send for our Catalog and "Special" —free.

C. M. SCOTT & CO. 1004 EAST WASH. STREET
INDIANAPOLIS, IND. ♦ ♦ ♦



Bee - Supplies !

We carry a large stock and greatest variety of everything needed in the Apiary, assuring best goods at lowest prices, and prompt shipments. We want every bee-keeper to have our **Free Illustrated Catalog**, and read description of Alternating Hives, Massie Hives, etc. Write at once for Catalog, either English or German language.

KRETCHMER MFG. CO., Council Bluffs, Iowa.

—AGENCIES—

Trester Supply Co., Lincoln, Neb. Fulton & Ford, Garden City, Kansas.
Shugart & Ouren, Council Bluffs, Iowa. I. H. Myers, Lamar, Colo.
Southwestern Bee Co., 438 W. Houston St., San Antonio, Tex.

Mention Bee Journal when writing.

Get New Subscribers

Why not get a New Subscriber for the American Bee Journal, to send with your own renewal?

If you want the Bee-Book

That covers the whole Apicultural Field more completely than any other published, send \$1.20 to

Prof. A. J. Cook, Claremont, Cal.,

—FOR HIS—

"Bee-Keeper's Guide."

Liberal Discounts to the Trade.

Bee-Keepers' Early Discounts

Now is the Time to send in your order for goods for use next season, and for all orders where cash accompanies we allow the following discounts:

Before October 1	deduct 10 percent
" November 1	" 9 "
" December 1	" 8 "
" January 1	" 7 "
" February 1	" 6 "
" March 1	" 4 "
" April 1	" 2 "

Freight-Rates from Toledo are the lowest. Can take Honey and Beeswax in exchange for Supplies if you desire. Send for free illustrated Catalog. It describes and illustrates everything for both the Poultry and Bee Keepers.

GRIGGS BROS.

521 Monroe Street,

TOLEDO, - OHIO.

Mention Bee Journal when writing.

AT CHICAGO

Our branch is located at 144 E. Erie St. It is in charge of Mr. R. W. Boyden. We keep at this branch a very complete stock of our bee-supplies. Shipping there very frequent carloads of goods, you can get from Chicago any special supplies with very little delay. On regular supplies we can save you both time and freight.

Mr. Boyden is thoroughly familiar with our line of Supplies, and is also a born bee-keeper. He knows the city. We trust our friends will feel perfectly free to ask his services in any way. Mr. Boyden will be present at the National Convention, and stands ready to accommodate you.



Our Line for 1906

OUR HIVES AND SECTIONS

Our hives and equipment, both for workmanship and clearness of stock, can not be excelled, and we doubt if they have ever been equalled. So strong is the demand for these goods that there has been a strife in many cases among dealers to get the Root Company's lines because they knew that everything that bears the Root brand is always popular with the customer, and always the best that money and brains can produce.

Our sections and frames for 1906 are even better than ever. They are inspected and re-inspected, and each inspector is required to put in each box of sections that he passes upon his own inspector's card, so that if complaint is made this card will come back on him. As he is anxious to hold his position and if possible get an increase in pay, it is clearly to his interest, as well as that of the customer, to let nothing but perfect goods pass.

THE ROOT AUTOMATIC EXTRACTORS

Our extractors for 1906 in point of improvements and quality of workmanship leave everything else in the shade. The four, six and eight frame machines have the finest automatic reversing mechanism that has ever been put into a machine. Even the two frame models can have the reversing mechanism put on at a slight additional cost; but we do not ordinarily advise buying the two-frame automatic. Steel construction has been substituted for cast iron wherever practicable.

OUR CATALOG FOR 1906

A great improvement over last year. Entirely revised and rewritten. New cover. New cuts. Every article is classified. No price-tables to confuse. The price of each article is directly under the description or illustration. The first edition is now on the press. If you wish a copy of this let us have your name *now*.



December 15th Gleanings



When this issue of the American Bee Journal reaches you our Splendid Christmas Issue will be ready for mailing. Without doubt the finest bee-magazine ever printed. Three-Color Cover. 100 pages of matter. Many beautiful halftones. Extremely valuable articles. We have a limited number of copies which we will sell at 10 cents each. Better send 25 cents *now*, and we will send the Magazine for 6 months' trial, and include this number, or, better still, send \$1.00 for the year. You will find Gleanings in all principal clubbing lists.



THE A. I. ROOT COMPANY, Medina, Ohio

BRANCHES: 144 Erie St., Chicago

10 Vine St., Philadelphia

44 Vesey St., New York

ESTABLISHED IN 1861 THE AMERICAN OLDEST BEE-PAPER IN AMERICA

BEE JOURNAL

(Entered at the Post-Office at Chicago as Second-Class Mail-Matter)

Published Weekly at \$1.00 a Year by George W. York & Co., 334 Dearborn St.

GEORGE W. YORK, Editor

CHICAGO, ILL., DECEMBER 21, 1905

Vol XLV—No. 51



Editorial Notes and Comments

Father Langstroth's Heretofore Unpublished Poem

The front page this week will, we believe, be admired and also appreciated by every reader of the old American Bee Journal. The poem was written and sent to us by Father Langstroth himself, in August, 1895, just a month or so before his death. We have kept it all these years, and now, at this Christmas convention season we publish it with the excellent full-length portrait of the great, loving and beloved Langstroth, whose name and memory are revered by every bee-keeper who knows anything at all about the interesting history of American bee-keeping.

As we read his tender lines to his wife, who had preceded him, we get a glimpse of his loyalty and devotion to one whom he adored throughout the long years of wedded bliss, and whom he expected soon to meet and greet in "The Better Land."

Langstroth! Some day there should be written a volume containing a detailed account of the life and work of Lorenzo Lorain Langstroth, for the benefit of the world of bee-keepers, for to his invention of the movable frame all who to-day are enjoying profits from the honey-bee owe their success.

Shall We Take More than One Bee-Paper?

The effort is constantly being made to have the American Bee Journal so comprehensive and instructive that it shall, as nearly as possible, contain all that is necessary to keep its readers fully abreast of the times, so that they will not need any other bee-paper. The same, no doubt, may be said of other bee-papers. Please notice, however, that phrase, "as nearly as possible"—it is advisedly spoken. When all possible effort has been made, it still remains true that some other paper may contain something of so much value that its knowledge might well be worth the year's subscription. The editor of Gleanings well says:

"If any one keeps bees for the money he can make out of them, he ought by all means to take not only one journal but two or three of them. Gleanings does not pretend to cover the whole field of apiculture. The personal bias of an editor, even though that bias be unconscious, may cause him to emphasize certain developments of bee-lore to the

total neglect of all others. As I look over our exchanges I can see fields that they are covering that Gleanings is not; and, conversely, I can see fields that we are covering that they do not.

"W. L. Coggshall, perhaps the most extensive bee-keeper in the world, once said to me that he could not afford not to take all the bee-papers published in the United States and that, moreover, he could not afford not to scan every page after they came into his hands."

Even if nothing entirely new were to be found in other papers, it sometimes happens that the same truth presented in different words appears in a different light to the reader, so that it is almost like the reception of a new truth. "Keep more bees" is likely to be good advice. Equally good is the advice, "Take more than one bee-paper."

A Western Convention on Wheels

Editor Aikin, in Irrigation, suggests that if a number are going to the Chicago convention from Colorado, they might get together on the same train, "and so have a convention all the way through." These traveling conventions have proven very pleasant on other occasions, and have some advantages over the more usual kind. But it is somewhat cheaper to "hire a hall" than a railroad car.

Prevention of Granulation of Honey

An item in Praktischer Wegweiser says honey will remain liquid if put in tin or glass vessels and then allowed to stand 5 or 6 days in the sun in a solar wax-extractor. Whether this proves an entire success or not, one can easily believe that the tendency will be in that direction. More than one case has been reported of section honey kept in an attic, where the fierce heat of the summer so cured it that the zero weather of the following winter had no bad effect on it.

Caucasian Bees—Various Opinions

Reports as to a new race of bees are generally more or less contradictory, and there is no exception in the case of the Caucasians, unless it be that accounts are more contradictory than usual. Ratings vary all the way from worthless to the very best. As to their appearance, little has been said beyond the fact that they are so like blacks in appearance as to be difficult of recognition. The following description, written by "Swarthmore," in the American Bee-Keeper, is therefore of interest:

"Caucasians are very dark, inclined to vary a little, striped with narrow brownish bands, with a cast of brownish hairs, somewhat like the Carniolans. The workers are quite small, but very active; the drones are as black as your

shoe, much smaller than Italian or Carniolan drones; the queens are not large, quite dark, with bronze or copper-yellow spots on their under sides; very prolific. Both queens and workers are quite nervous under manipulation, but do not run off the combs nor pile in knots, as do the blacks. Caucasians are exceedingly gentle, and will submit to manipulation, almost to actual abuse, without resentment. They seldom require much smoke—the breath often only being needed to open their hives and to drive them back. Yet they are alert in defense against robbers."

Driving them back with the breath seems to work in a peculiar manner upon Caucasians. Blowing the breath upon other bees is likely to be the signal for a prompt attack upon the blower.

Shipping Carloads of Comb Honey

Mr. Leo F. Hanegan, manager of the St. Croix Valley Honey-Producers' Association, referring to several statements made recently in the American Bee Journal about the number of pounds in a carload of honey, etc., writes us as follows:

GEORGE W. YORK & CO.—

Gentlemen:—Regarding the amount of honey to a carload, I will say that our experience is that 1000 to 1500 24-section cases of comb honey make a fair load; in fact, all that we feel safe in piling in one car. We have shipped

brought out some points relative to this carload question, and asked for discussion of the subject, but received no response.

Shipping comb honey in carload lots is the safest and most satisfactory way to move it a long distance, and this subject should have its place in the bee-papers, as well as how to produce honey.

I am sending you a copy of the American Bee-Keeper referred to above, and will furnish the engravings used therein if you wish them.

Glenwood, Wis., Oct. 19.

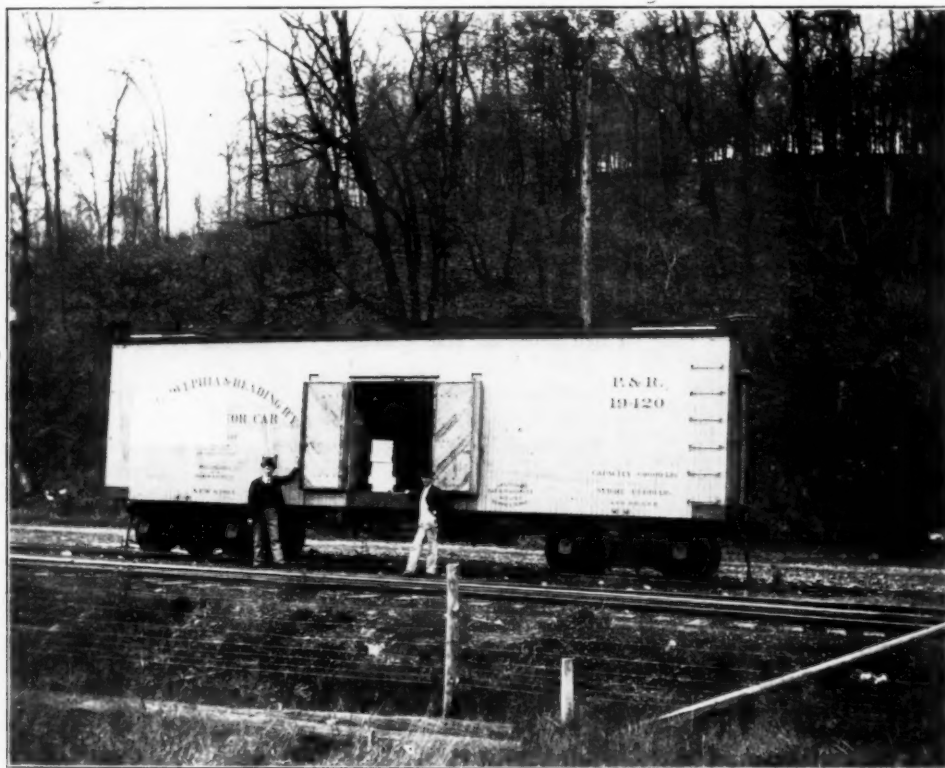
Yours truly,
LEO F. HANEGAN.

We take the following extracts from the article referred to by Mr. Hanegan as having appeared in the American Bee-Keeper, which was written by its editor:

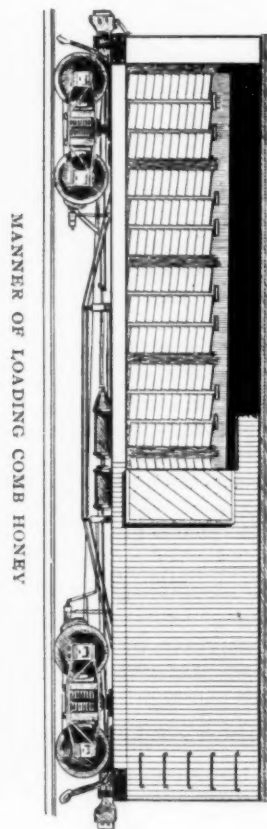
Some time ago, Mr. Leo F. Hanegan, manager of the St. Croix Valley Honey-Producers' Association, sent a photograph showing a side-tracked car which his Association was loading with comb honey. Some correspondence in regard to their method resulted, and considerable interesting information was secured.

In the first place, a clean, dry refrigerator car is ordered, though, of course, no ice is used, but a clean, dry car is important.

The accompanying drawing will illustrate the manner of loading about 1200 24-section cases, making a good load. The car in the sketch contained 1100 such cases, and represented a cash value of about \$2900, f.o.b. at loading point.



LOADING A CAR WITH COMB HONEY, IN WISCONSIN



1963 24-section cases in one car, and over 1650 in another, but, if we were correctly informed, the honey did not arrive in as good condition as it should have done.

In the Western Freight Classification the minimum car of comb honey is put at 30,000 pounds. There is no use to load over that amount. Taking out casetare and straw leaves about 25,000 pounds net of honey. Our largest car recently shipped cost the buyer \$5000, f.o.b.

Yes, 1200 24-section cases make a good car, and all that need be put into one car.

A box-car will do, but a refrigerator car is tighter when sealed, so that dust can't get in in transit. Also, a refrigerator car is heavier and better built, and, therefore, rides easier, and ordinarily will hold all that should be put into one car.

In the American Bee-Keeper for June, 1905, the writer

About 3 inches of straw upon the floor is used; at the ends 15 inches. Between the tiers about 6 inches of straw is securely packed, with only enough at the sides to make the shipping-cases fit snug and tight. The straw should be clean, and oat-straw is preferred.

Where a full carload is to be shipped, the cases are packed 10 high; but if a less number the tiers are not made so high, as they should be so loaded as to meet at the middle of the car.

It should be noted also, that the cases pitch forward toward the middle; and that the "break joints" thus add to the solidity of the aggregated weight.

Unless the buyer specifies other method of loading, this plan is always followed, and upon each end and each door of the car a caution card—"Handle with Care"—is tacked. That is, cases are loaded from each end, and the meeting-

place solidly packed with oat-straw, which packing comes well above the tiers of cases.

Over the joints of tiers in the drawing may be seen the ends of stout cleats or beams crosswise of the car, which serve to hold down the cases. These, however, are used only over the joints of the 3 end rows, though our artist has tried to make things doubly safe by using them throughout the length of the car.

Mr. Hanegan further advises that before loading a car with comb honey one should be sure that it has no "flat wheels," as "a flat wheel will make mush of a load of comb honey in short order."

HARRY E. HILL.

Mr. Hanegan says further, in a letter to us, that the cases do not stand as sloping as represented in the smaller engraving. By loading thus he feels that honey will stand more rough handling than by loading in any other way. He has loaded very large cars where the honey was packed solid, with some 12 inches of straw in each end of the car. The honey in cars packed thus, however, did not arrive in as good condition as when packed with straw between every few tiers of cases.

Mr. Hanegan very kindly offers to furnish any further information that may be desired by our readers. We shall be pleased to hear from other honey-producers who have had experience in shipping carloads of honey. This is a very important subject, and one that specialists in comb-honey production will need to consider more and more as the years come and go, and as their interest in bee-keeping increases.



A Merry Christmas to every reader of the American Bee Journal is our wish.

He Reads Two B's.—A North Carolina bee-keeper was asked lately what he was reading. His reply was: "Two B's. The Bible and a Bee-book."

The National Convention for 1905 will be almost closed by the time the majority of the readers of this number of the American Bee Journal receive it. We expect to publish a full report of the proceedings in these columns as soon as possible after the convention. The program as prepared by Secretary Hutchinson is given below.

Samuel Dysart, of Franklin Grove, Ill., wrote us as follows on Dec. 4:

I have taken the American Bee Journal almost continually since it was published by Wagner, in Washington,

D. C., which must be nearly 50 years ago. I kept bees then, and I have them now, and desire to keep company with what I call my little friends as long as I can look after them.

With kind regards to all lovers of the honey-bee, I am
Yours respectfully,
SAMUEL DYSART.

We are very glad indeed to hear from the older readers of the American Bee Journal, which was started by Samuel Wagner, in January, 1861, so it is not quite 50 years ago. Occasionally we receive a letter like the one from Mr. Dysart, although we suppose there are not very many among our subscribers who took the American Bee Journal when it first started, and have continued ever since. If it were possible to get them all together in one group, we would like very much to have a photograph taken of them to use in the Journal.

Considerate Bee-Keeper.—Mr. E. Brubaker sends us the following clipping:

A thoughtful bee-keeper was greatly harassed by the question ever uppermost in his mind, "Have I any right to rob these bees of their honey?" After a long time he settled the question this way:

"I used to feel mean about robbing the bee-hives, but after thinking the matter over I see now I am right. If it wasn't for me taking the honey, all of them bees would be out of work the whole of next summer."—Boerne Post.

But "all of them bees would be" dead by "next summer." So his considerateness for the bees was all wasted. But he doubtless got the honey for it, anyway.

Mr. Thos. Wm. Cowan, editor of the British Bee Journal, who has been spending some months in California, wrote us from Vancouver, B. C., recently:

DEAR MR. YORK:—We are just starting East, and hope to reach London before Christmas, so as to be with all our family again. We have much enjoyed our visit, and were pleased again to see our friends. We have met friends all along our route, and have had a hearty reception.

Yours truly,
THOS. WM. COWAN.

We trust that Mr. and Mrs. Cowan may arrive in London again safely, and in good time to enjoy the holiday season with their family and old-time friends in the homeland.

The Minnesota Convention was held Dec. 6 and 7, in Minneapolis. We expect to publish a report later. The officers elected for the ensuing year are as follows:

President, Dr. L. D. Leonard, of Minneapolis; 1st Vice-President, Scott La Mont, of Jarretts; 2d Vice-President, J. M. Doudna, of Minneapolis; 3d Vice-President, J. W. Murray, of Excelsior; Secretary, Rev. C. B. Blaker, of Richfield; and Treasurer, W. S. Wingate, of Minneapolis. Executive Committee, H. G. Acklin, of St. Paul; Rev. J. H. Kimball, of Duluth; and Wm. Russell, of Minneapolis.

Why Not send in some new subscriptions for the American Bee Journal? Samples free for the asking.

PROGRAM FOR THE NATIONAL CONVENTION.

FIRST DAY—TUESDAY.

EVENING SESSION—7:30 P.M.

Wax-Rendering Methods and their Faults—O. L. Hershisier, Buffalo, N. Y.

Can the Tariff on Comb Honey be Tinkered to the Advantage of the United States Bee-Keeper?—Hildreth & Segelken, New York.

SECOND DAY—WEDNESDAY.

MORNING SESSION—9:30 A.M.

How Many Bees Shall a Man Keep?—E. D. Townsend, Remus, Mich.

Short Cuts in Bee-Keeping—M. A. Gill, Longmont, Colo.
Question-Box.

AFTERNOON SESSION—2:00 P.M.

The Control of Increase—L. Stachelhausen, Converse, Tex.

Migratory Bee-Keeping—R. F. Holtermann, Brantford, Canada.

The Dietetic and Hygienic Relations of Honey—Dr. E. L. Eaton, State Analyst Illinois Food Commission, Chicago.

Question-Box.

EVENING SESSION—7:30 P.M.

Contagious Diseases Among Bees and How to Distinguish Them—Dr. Wm. R. Howard, Ft. Worth, Tex.

Experimental Apiculture—Dr. E. F. Phillips, Washington, D. C.

THIRD DAY—THURSDAY.

MORNING SESSION—9:30 A.M.

The Honey-Producers' League—Can it Help Bee-Keepers?—R. L. Taylor, Lapeer, Mich.

The Business End of Bee-Keeping—N. E. France, Platteville, Wis.
Successful Experience in the Making of Honey-Vinegar—H. M. Arnd, Chicago.
Question-Box.

AFTERNOON SESSION—2:00 P.M.

In What Way Can Bee-Keepers Secure their Supplies at Lower Prices?—W. H. Putnam, River Falls, Wis.

How the Producer and Dealer May Advance their Mutual Interests—Fred W. Muth, Cincinnati, Ohio.

Question-Box.

EVENING SESSION—7:30 P.M.

What Have We to Hope for from the Non-Swarming Hive?—L. A. Aspinwall, Jackson, Mich.

Poultry Keeping for the Bee-Keeper—Emerson T. Abbott, St. Joseph, Mo.



Contributed Special Articles

Honey Markets—Bees and Pollination— Cleome

BY PROF. A. J. COOK.

SINCE coming to Europe I have been surprised at two things: First, the apparent scarcity of honey as an article of food; and, second, at the high price which it brings in the market.

As to the first point, let me say that though I have been in all the British Isles—England, Ireland, and Scotland—in France, Belgium, Holland, and now in Germany, yet not in a single case, either at hotel or pension, has honey been put before us. Several times I have called for it, only to be told that there was none at hand. I had been told that in Europe honey was as invariably a table article as is butter in America. True, this was said of Switzerland, and as yet we have not feasted at the boards of the Swiss. But so far as I have seen and tasted this incomparable sweet, the best of all the carbohydrate foods is most marked by its scarcity in all European hostelryes. I would that honey might be known and tasted, yea, freely eaten by all who crave this delectable food.

Again, honey is very high in all the countries where I have visited. I ask for it at the groceries, only to be told, in case it is to be had at all, which very often it is not, that it is, in Britain, from $\frac{3}{4}$ to 1 shilling—that is, 18 to 25 cents per pound; in France and Belgium, a franc or more, which is 20 cents; in Holland about the same, while here in Berlin it takes a mark (about 25 cents) to get a pound of comb honey.

It is unfortunate that our splendid comb honey cannot reach the consumer at a price that he can afford to pay, even though he be a laboring man, earning his daily bread by the sweat of his brow. Such men are often—very often—God's best servants, and so most deserving his best bounties. Surely, it ought to be the good work of our associations so to plan that such wholesome food as honey shall reach the eater at a price that he can afford to pay, even though he be an humble member of society.

If our associations could so plan that enough of the middle men would be eliminated so that prices would remain within the reach of the day-laborer, a great blessing would be wrought. I believe that the American bee-keeper could live and thrive if extracted honey could always be sold at 6 cents per pound, and comb honey at 10 cents per pound. Can we not fashion machinery that will carry this to the table at a 50 percent advance—say 9 cents for extracted and 15 cents for comb? What a boon it would be could the world's poor get these, and even better rates on second-grade honey! I hope our associations, such as have been organized in some of the States, as well as the National Association, will hammer away on this proposition till results come that will bless the producer and the consumer alike.

I am also rather surprised to learn how away-behind the European honey-producer is in the way he puts his honey into the market. True, I have seen some fine, clean sections, but for the most part, when I have called for honey I have been offered an article that would find no buyers at all in the marts of our own cities. This, I believe, is true all along the line. We do our work better and practice methods that are far more brainy than are those used here. In getting from Europe such masters as the Dadants, and Grimms, I believe we have secured the very best that Europe has to give. The rank and file of those who hold the plow—all those who work in manual-labor pursuits—read and study far less than do our farmers, orchardists, and bee-keepers. Their ways are away behind ours, and their methods are surprisingly not up-to-date.

BEES AND POLLINATION.

I am surprised to find how few in Europe, especially in Britain, depend solely upon bees for their support. I am told, by reliable authority, that only one person in all the British Isles is exclusively a bee-keeper. It is said that he is constantly facing the "wolf at the door," yet there are hosts of small bee-keepers, who keep a few bees. Thus the number of bees is greater than in many sections of our own country. I believe the good that comes to

European agriculture from this redundancy of bees is far from being appreciated. Bees do a grand work in cross-pollinating the flowers of orchard, garden and field. They help tremendously in increasing the productivity of crops by this necessary work. Speed the day when every section of the United States shall be as populous in bees as is the best stocked countries of Germany, Switzerland, and Austria.

YELLOW CLEOME.

A subscriber from Arizona sends me flowers of what we may well call the "Arizona Bee-Plant," or yellow cleome. He says it often yields very abundantly of nectar, and barring the fact that it often fails utterly as a honey-plant, he would regard it as one of the very best honey-plants of the world. He adds that the years of failure are in the majority.

This is a close relative of the famous Rocky Mountain Bee-Plant, or we may well call it the Colorado Bee-Plant. The latter is pink, while this Arizona one is yellow.

This is known to science as *Cleome lutea*, or yellow cleome. It is also closely related to the other cleome, or spider-plant. I mention both the other plants in my "Bee-Keeper's Guide," but not this one. It deserves a place in the list.

It will be remembered that, years ago, in the '80's, when I experimented under the auspices of the U. S. Government, to determine if special planting for honey was practical, I used *Cleome integrifolia* as one of the plants. I found, just as our friend says of this Arizona bee-plant, that it very often failed to give any honey at all. I drew the conclusion,—and I see no reason now to change the verdict,—that special planting for bees is not a practical proposition. Often the results will be nothing, and thus the balance will be on the loss side of the ledger.

We may well plant sweet clover and the mints by the roadside and in waste-places; we may well plant lindens, tulip trees, etc., along the highways (eucalypts or acacias, if in the arid regions); we are wise to encourage farmers in sowing alfalfa, alsike, buckwheat, etc.; but I do not believe it will ever pay to use good land to produce plants that are only valuable for honey.

Were I to locate an apiary, I should like, if possible, to be close by large orchards, to have the early stimulative effects of orchard bloom. For like reasons I should like to have abundant soft maples in the East, and many buck-thorns in California. Above all, I should wish hard by the basswoods and white clover in the East, and sages and wild buckwheat in the West. Berlin, Germany.



Economy of Wintering Bees in the Cellar

BY C. P. DADANT.

I FIND the following from the pen of Dr. Miller, in *Gleanings in Bee-Culture*:

"C. P. Dadant says in the *American Bee Journal* that 8 or 10 pounds is a fair estimate of the honey consumed by a colony wintered in the cellar, and nearly double that by a colony on the summer stand in a cold winter. According to that, for the labor of carrying in and out one would get about 8 pounds of honey for each colony. Good pay. At the same time, I'd be glad to feel sure that the cellared colony is just as well off in all respects."

This item has called my attention to the fact that I have perhaps not explained my meaning sufficiently. I did not mean to say that the amount stated would carry a colony from crop to crop, but only through the real winter—the time when bees are kept in the cellar. My experience has been that the colony wintered out-of-doors has in the meantime produced a larger quantity of brood than the colony wintered in the cellar; that when the cellared colony is taken out, it has to get accustomed to the changed conditions and has to begin to breed, and that it, in the end, spends a goodly portion of the savings in catching up with the other, wintered out-of-doors.

I have often heard Canadian bee-keepers say that their bees breed in the cellar, at the end of winter, but I have seen very little of this in our latitude. Different conditions cause different results. We do not leave our bees so long in the cellar here, as they do at the North. We cannot, for as soon as the warm days come the difficulty arises of keeping them quiet. That is why we have ceased wintering bees in the cellar, although there is occasionally a season when we would be glad to have them indoors.

But we are unable to foresee cold winters. Many a man has tried to predict the future weather. Many a man has said that the bees, the animals, the corn, even, prepared for a cold winter when it was coming. I believe this is all a mistake. Neither the insects nor the plants know more about the future than we do, except that through years or centuries of natural selection, those succeeded best and survived that bent themselves to the changes of seasons.

Some farmers say that the corn has a heavier husk when a hard winter is coming. I wondered how this could be, until one season I was told by two different farmers of great experience that the winter would be hard, and that it would be mild, for the one said, "The corn husks are heavy," and the other said, "The corn husks are light."

I can see very plainly that Dr. Miller understands the situation in regard to cellar-wintering fully as well as I do, for the last remark he makes, "I'd be glad to feel sure that the cellared colony is just as well off in all respects," indicates that he realizes the difference in conditions at the time when the hive is taken out of the cellar. If I were as far North as Dr. Miller, I believe that I would winter my bees in the cellar every winter. One winter or even a half-dozen winters are not sufficient to decide the question. But for years we tried cellar-wintering side by side with outdoor wintering, placing sometimes an entire apiary, sometimes only a portion of it, in the cellar prepared purposely for them, while other apiaries remained entirely out-of-doors.

After all these trials I have come to the conclusion that it is as well to risk outdoor wintering in this latitude. But with small hives, or weak colonies, short in stores, and a good cellar in easy reach of the apiary, I would still recommend cellar-wintering. A little south of us, or below the 40th degree, I believe cellar-wintering should be discounted, while north of this latitude it is probably more profitable to winter the bees in the cellar.

I wish, in closing, to thank Dr. Miller for the remarks made, as these have called my attention to the possible misunderstanding I caused. If there is a bee-keeper whose opinion I value above all others, it is Dr. Miller, for he has a very extensive practical experience, and never advances a thing unless he is sure of it. He never jumps at conclusions, and never supports that which he has not proven correct.

Hamilton, Ill.



Best Bee-Hive—Something About It

BY G. M. DOOLITTLE.

A SUBSCRIBER to the American Bee Journal writes: "Will you describe the best bee-hive, and tell us something about it, as I wish to make some hives the coming winter."

This is a hard question to answer, for nearly every person keeping bees believes he or she has the *best bee-hive* in existence, and when I say that the number of different bee-hives in use reaches into the scores, if not into the hundreds, it will be seen how difficult it would be to do as requested.

Probably the hive most in use (unless, perchance, it is the box-hive) is what is termed the "Langstroth." Then next in order comes the Gallup, Quinby, Danzenbaker, Hoffman, Simplicity, Heddon, American, etc., nearly all of which are only a modification of the Langstroth to suit the different notions of different persons using them and putting them before the public, for there is scarcely a frame hive today but what embodies more or less of the Langstroth principles, especially as to bee-space and the frame principle.

With the progressive bee-keeper the box-hive is a thing of the past, although there are a few using them which do quite a good business with them, by having the combs built to slats along the top of the hive, with a movable top-board so that the surplus boxes or sections can be set right over the combs. With the farmer bee-keeper—one who never thinks of handling the frames or even looking inside of the hive—a box-hive so arranged would probably be as good for him as the best frame hive ever made. But such a one could not be considered a progressive bee-keeper.

Excluding, then, the box-hive, we have a simple box arranged for bee-spaces and containing frames as the *best* hive, letting him or her who uses it make said box and frames of any dimensions which they may choose.

As "my notions," away back in the early seventies, led me to prefer the Gallup form of the Langstroth frame, I will briefly describe how this hive is made, so that anyone can make it, or a modification of it, as he pleases.

Get lumber 12 inches wide and $\frac{7}{8}$ of an inch thick, planed

on one side (or both, as you please), and saw it into lengths so that when nailed you will have a box without top or bottom 12 inches deep, 12 wide, and 18 inches long, inside measure. Before nailing, on the upper inside edge of the two long boards rabbet out a space $\frac{1}{2}$ inch deep by $\frac{5}{8}$ back, for the frames to rest on, and on the bottom edge of one of them cut out a piece 12 inches long by $\frac{3}{8}$ deep, for an entrance.

A plain board of the right size, with two pieces of 2x4 stuff nailed on the under side near two edges of it, running crosswise of the grain, constitutes the bottom-board or stand for the hive. If it is preferred, the hive itself can be made without the entrance cut in it as above; and, if so, then cut out strips from the $\frac{7}{8}$ stuff $\frac{3}{8}$ thick, and after cutting them the right length, nail them to three sides of the upper side of the bottom-board, when the fourth side, not having one of these strips nailed to it, will constitute the entrance, which can be contracted to any desired dimensions by using entrance-blocks, giving an entrance of $\frac{3}{8}$ by 4 inches for winter and early spring, up to the whole width of the hive for summer.

The frames are made of stuff sawed $\frac{1}{4}$ -inch thick from an inch board, and cut to the right length so that when nailed together the outside of the frame will be $11\frac{1}{4} \times 11\frac{1}{4}$ inches square. The top-bar to the frame is to be long enough to project $\frac{3}{4}$ of an inch at each end, so as to hang on the rabbet prepared in the upper part of the side boards of the hive for them. Hang the frames in the hive so 12 of them fill it, and the proper bee-spaces will be given, according to my views, as I prefer a space $1\frac{1}{2}$ inches from center to center of the frames, having tested the matter for years.

Make the surplus part of it to suit your notion, with or without a honey-board, and with or without a cap or hood. If you use a cap or hood, then the cover can be a board of the right size to cover the top, or the same can be of enameled cloth, quilt, canvas, or anything you may choose, with the cap or hood filled with leaves, chaff or sawdust above the cover for wintering. Where no cap or hood is used, then a cleated board, water-proofed in some way, should be used as a cover, the same being a cover for the hive and the surplus arrangement, as well, when that is on.

In the above we have the best bee-hive principle in existence, and one which can be made in any conceivable shape to suit the desires of the most fastidious, and yet the word "LANGSTROTH" suggests all there is of it, and carries the minds of all who delight to honor the Father of Modern Apiculture back to the time when this noble man (who passed to his heavenly home a few years ago), spent hours, days and years of toil and study in inventing this principle, that we, his apicultural children, might profit and enjoy that which he wrought out for us.

At the out-apiary I use the regular Langstroth frame, and 10 of these to the hive. Where an apiary is worked on the "shook-swarming" plan, a large hive seems to give the best results; and an out-apiary cannot well allow natural swarming.

Borodino, N. Y.



Convention Proceedings

Report of the Texas Convention

BY LOUIS H. SCHOLL, SEC.

(Continued from page 865)

Mr. Aten, in behalf of the bee-keepers, asked for a statement concerning the work of the experimental apiary.

Mr. Scholl went over the ground since the establishment of the apiary, and what had been done. He also gave an outline of the experiments contemplated, together with other work now under way, and some of the problems that are to be solved, as follows:

DOES ALFALFA PRODUCE HONEY IN TEXAS WITH OR WITHOUT IRRIGATION?

With the advent of irrigation in the arid regions, will Texas ever be classed with the Western States that produce enormous amounts of alfalfa honey annually?

It is the general belief that alfalfa is a good honey-producing plant, but no satisfactory data to that effect in Texas has been obtained. Investigations of this subject

therefore would be highly valuable. If, as irrigation and the growing of alfalfa advances, the honey-yield is relatively increased, many localities for the location of new apiaries will be opened, and it will mean thousands of dollars to this State.

AMOUNT OF HONEY TO MAKE A POUND OF WAX.

To determine definitely the amount of honey consumed by bees in making 1 pound of wax.

It is claimed by some apiarists that from 12 to 24 pounds of honey are required to produce one pound of wax. Others claim this to be too high, and give 7 to 8 pounds of honey to one of wax.

SWARMING.

Careful study and experiments with proposed methods of controlling and preventing swarming. In connection with this, manipulations of the brood-nest and combs to stimulate additional brood-rearing and added surplus production.

If this can be overcome in the College apiary it should be possible to produce a fair crop of surplus honey annually in an average season with 20 colonies, a greater number exceeding the supply of the locality.

LENGTH OF LIFE OF DIFFERENT RACES OF BEES.

A test of different races of bees to determine the comparative length of life of the individual bees in these different races: Holy Lands, Goldens, Three-banded Italians, Cyprians, Carniolans, and Blacks.

Get all colonies ready and of the same strength, and dequeen and introduce a queen of a different race and color. Subtract the days between dequeening and requeening.

RACE OF BEES FOR TEXAS.

Race of bees adapted to the varying conditions in different parts of Texas.

Queens of selected races to be reared at the College and distributed among experienced apiarists in different parts of the State, who will take careful note of observations and report to the Department. A reasonable amount of cost is to be charged for such queens, in half-dozen lots, which will contribute to the income of the apiary and yield results at the same time.

QUEEN-REARING.

Experiments in queen-rearing. 1st. To determine the quickest and best methods of rearing *good* queens; and 2d, an attempt to determine method of controlling the mating of queens, or mating in confinement.

Would naturally come under No. 6, in rearing the selected queens and getting them purely mated.

DISEASES OF BEES.

Investigation of foul brood, black brood, pickled brood, and bee-paralysis, to determine needed facts regarding the same, as method of infection, resistance of germs and spores, etc.; method of treatment in eradication, fumigation, etc.

Not practical without a well-equipped bacteriological laboratory, but which can easily be established with material already in the Department.

DISTANCE BEES RANGE.

How far may bees travel to gather honey profitably? How far should bees range to secure the maximum amount of honey (with most profit) from a given territory?

A valuable factor in locating apiaries, as on the Brazos river, to determine whether bees can be profitably located on high bank on the College side of the river in comparison with those located on low land nearer the honey-producing territory which is subject to overflows.

HONEY-PLANTS OF TEXAS.

A study of the honey-plants of Texas and of the territory surrounding College Station.

(a) Card cataloging above honey-plants as already under way.

(b) Listing distributions of honey-plants of the State on area maps of Texas.

(c) Making a complete herbarium collection of Texas honey-plants.

(d) Making a complete card catalog according to their blooming periods, with the length of blooming periods, importance of honey or pollen, and their distribution.

HIVE TEMPERATURES.

Testing various styles of hive-covers to determine their resistance to heat, by the use of thermometers, making close observations during the hot season.

Ascertaining the difference in temperature existing in hives placed in direct heat of the sun, with and without shade-boards, compared with several in the shade.

FOR FUTURE EXPERIMENTS.

Experiments that might be taken up later, but necessitating a location of better honey-production than is possible at College, could be made possible by having established an out apiary in the Brazos river bottom, about 10 miles from College. Valuable data on the following could be obtained by locating such a yard.

(a) Establishing outyards; the selection of the location; best arrangement to make with the land-owner in regard to permit to locate, rent, and hiving of swarms.

(b) Best method of moving bees to outyard; placing and arrangement of hives.

(c) Management of outyards, with a view toward the largest amount of profit with the least amount of time of labor and expense.

(d) Best race of bees for outyards; the best for the largest yield of honey; a comparison of different races for such.

(e) Hives. Best for honey-production; best for manipulation to prevent swarming.

(f) Prevention of swarming, to increase the yield of honey and profits, to decrease amount of labor and expense; and to prevent loss of swarms where no person is present to care for them. This can be accomplished to a great extent by the right method of management with the right kind of hive, and the right kind of race of bees.

There are also other matters under consideration for experiment, and these will be taken up as time permits. The above is simply an outline that was written out some time ago, and it may be changed from time to time, as best suits the time and the favorableness of the seasons.

LOUIS H. SCHOLL.

It was moved and seconded that a vote of thanks be extended to Mr. Scholl for his kindness and generosity towards the bee-keepers.

Mr. White thought that the Texas Bee-Keepers' Association should give Mr. Scholl such help and encouragement as would enable him to carry out the work at the College apiary. Much good could be done if the bee-keepers put all heads together, and he believed that the bee-keepers ought to help him.

Mr. Aten moved that a committee be appointed to consult with the proper persons in regard to having experimental work done at the experimental apiary, and concerning other matters pertaining to the apiary. The motion was seconded and the following committee was appointed: F. L. Aten, W. O. Victor, C. A. Butts, and W. H. Laws.

J. F. Teel related some experiments with different kinds of honey-plants that he has conducted. These included alfalfa, buckwheat, and clovers of all kinds. Alfalfa yields some honey during the heat of the day, buckwheat yields until 9 or 10 o'clock when dewy mornings prevail, but few of the clovers, however, amount to anything with him.

ELECTION OF OFFICERS AND MEMBERS' REPORTS.

The election of officers for the next term resulted as follows, each one being unanimously elected, the secretary-treasurer of the Association being re-elected for the eighth time: President, F. L. Aten of Round Rock; vice-president, Willie Atchley of Beeville; and secretary-treasurer, Louis H. Scholl of College Station.

On account of lack of time the minutes of the last meeting were not read, and a committee was therefore appointed to inspect and report upon the books of the secretary-treasurer at the next meeting. This committee consists of Willie Atchley, C. A. Butts, and J. F. Teel.

The total number of colonies represented by the members present who reported to the secretary was 7,550 colonies. The Texas honey crop thus far was short, but prospects were good in most localities, while not so good in others.

The members reporting, the number of colonies, the amount of honey obtained to date, and prospects at present, are as follows:

F. L. Aten of Round Rock—200 colonies. Bees in fine

condition. Finest flow on he ever saw. Bees do not notice loose honey left in the yard.

J. M. Hagood of Enloe—80 colonies. Gloomy prospects. Bees weak. Cotton poor, but may have flow yet. Has had flow as late as October.

J. W. Traylor of Enloe—80. Gloomy prospects. Too much rain.

T. K. Ray of Indian Gap—50. Bees in 3 places, 1, 3 and 7 miles from home. Took less than 100 sections. Prospects better, as cotton is coming in.

T. P. Robinson of Bartlett—180. Two yards. Hives 6 feet apart. Some nuclei. Excellent honey-flow.

Miss Meta Hillje of Alvin—4. Flow just commenced, and favorable.

W. C. Lanford of Whittville—30. Have done no good. Prospects better. Cotton blooming. Has several kinds of bees.

Willie Atchley of Beeville—1,100. Poor flow and poor prospects.

Huber Laws of Beeville—12. 250 pounds of honey. Prospects poor.

Louis H. Scholl of College Station—240. Five apiaries in different parts of the State. Too wet in early spring, and too dry later. Everything burned up. Then floods in Brazos bottoms. Poor prospects, but a good flow from cotton now.

J. F. Teel of Van Alstyne—175.

J. B. Salyer of Jonah—150.

Z. S. Weaver of Courtney—275.

G. W. Cantrall of Uvalde—130.

W. H. Laws of Beeville—1,400. 900 colonies private, and 500 in partnership. Honey season past. Too much rain. Poorest season in years.

W. H. Madely of Rogers—200. 1,900 pounds of extracted and 600 pounds of comb honey taken. 3,000 pounds on hives. Still storing honey from cotton.

E. Blechschmidt of Knippa—120. Ten 120-pound cases of comb honey taken. Splendid prospects.

W. A. Breeding of Beeville—100. Bees in very good condition, and some honey on hives.

D. C. Milam of Uvalde—600. 24,000 pounds of honey. One-third extracted, the rest comb honey. Prospects good for fall flow.

W. C. Conrads of New Braunfels—85. 40 pounds average per colony. Prospects poor for the fall.

W. H. Sessions of Rice—12.

Udo Toepperwein of San Antonio—800. All in good shape, but not much honey. 9,000 pounds. Very good prospects.

W. O. Victor of Hondo—100. Sixty 120-pound cases of honey. 400 queen-rearing nuclei. Prospects uncertain.

Sam Madely of Navasota—110. One barrel of extracted and 350 pounds of comb honey taken; more to take. Prospects very good.

C. A. Butts of Normanna—350. 3,000 pounds of honey. No prospects.

J. W. Holland of Rice—12.

H. D. Simmons of Hutto—160. 60 pounds per colony. Good prospects with cotton and other yielders.

R. V. Sauer of Brackettville—110. 2,000 pounds of honey. Good prospects.

W. H. White of Blossom—60. Prospects gloomy. Too much rain.

Hugo Sattler of New Braunfels—95. 40 pounds of extracted honey on an average. Very good prospects.

J. W. Pharr of Berclair—60. No prospects. Bees in good condition.

M. P. Hill of Berclair—70. 1,300 pounds of honey—100 sections. No prospects.

L. W. Bell of Beeville—500. Very good prospects.

LOUIS H. SCHOLL, *Secretary*.

Honey as a Health-Food.—This is a 16-page honey-pamphlet intended to help increase the demand for honey. The first part of it contains a short article on "Honey as Food", written by Dr. C. C. Miller. It tells where to keep honey, how to liquefy it, etc. The last part is devoted to "Honey-Cooking Recipes" and "Remedies Using Honey". It should be widely circulated by those selling honey. The more the people are educated on the value and uses of honey the more money they will buy.

PRICES, prepaid—Sample copy for a two-cent stamp; 50 copies for 70 cts.; 100 for \$1.25; 250 for \$2.25; 500 for \$4.00; or 1000 for \$7.50. Your business card printed *free* at the bottom of the front page on all orders for 100 or more copies. Send all orders to the office of the American Bee Journal.



Mr. Hasty's Afterthoughts

The "Old Reliable" as seen through New and Unreliable Glasses.
By E. E. Hasty, Sta. B. Rural, Toledo, Ohio.

TANGING OF BEES AT SWARMING-TIME.

We should let up now on Prof. Bigelow as to the tanging question. He's all right now, whatever he may have felt about it at one time. He expressly disclaims advocating the old practice—and is not that abundantly sufficient? There is plenty of room for the like of Prof. Bigelow. We should joyfully make room for more of them if we could get them—men that care almost nothing for crops of honey, but are boiling over with interest to find out what are the absolute facts in regard to that lovable, hate-able, wonderful, biology-explaining, paradoxical, wise, fooling, tantalizing creature—the Honey-Bee.

After all, our main spite against tanging is that it has become a sort of badge to distinguish between those who know something about bees and those who don't know a thing yet as they ought to know. Tanging is felt to be like shouting with a megaphone. We are all fools at this ranch. But of course the pure scientist would like scientifically to *know* whether an unearthly racket does have any power to confuse bees, and make them yield to man's wishes when they otherwise would not. I confess I am not able to tell him. I incline to think the affirmative is true to a *certain very small extent*. It's certain the influence is not great—not nearly enough to pay the keeper of a big apiary in swarming-time for spending intensely valuable time at beating a pan. Popular faith in it largely owing to the fact that *time seems shorter* when we are skipping around doing something jolly than it does when we are just doing nothing, and waiting in a distressed tension of mind. There seems to be no way to settle it scientifically except to observe and record concerning thousands of swarms with tanging and thousands of swarms without, and then figure out the shaving of difference. Such a process reminds one of the process by which astronomers prove toward what point in space the sun is moving. That's important—and our question here is so unimportant that so far no competent person has felt like spending the enormous amount of time required. Page 790.

HEADING OFF SWARMING IN IDAHO.

So a brother in Idaho, whose name we know not, runs bees on extra-large frames, and 13 of them in a hive, hoping to head off swarming; but still they will swarm sometimes. Make a note of it. One suspects that the wording has got wrong somehow where Mr. Atwater says he produces comb honey in 8-frame hives kept one-story at all times. Page 791.

NATURAL CONDITIONS IN THE FALL.

Thanks to C. P. Dadant for his defense of natural conditions in fall in preference to having all combs completely solid with honey.

Too young bees eat themselves into diarrhea on a long trip, eh? That is quite comprehensible. Thanks. Page 791.

TWO QUEENS IN A HIVE—HIVING HIGH SWARMS.

The evidence given by A. F. Foote, that a big double swarm kept both their queens for 20 days is rather opinion than evidence, as 20 days is plenty of time to rear a young queen. With my bees such swarms are pretty apt to kill all their queens. Even when they go to work and store honey like everything they turn up queenless in the end.

And Mr. F. suspects that when conditions are such that sections are not joined to the bottom-bar bees would sometimes bob them off in the same way (as nearly as possible) with a bottom starter there all right. I think he is correct in that—that is, for *some* of the sections, not for as many as otherwise would be finished with a bee-space clear across the bottom. And the Foote improvement of the swarm-taking box and pole is noteworthy. Fix the pole to be stationary, and run the box up and down by a cord and pulley. Good—if you succeed at all with that style of doings. Some brethren (of which I am one) vote the whole

scheme a failure and a nuisance. Who wants to waste time hiving a *part of a swarm*? Bees so fanatically attached to their chosen spot that a large fraction of them refuse to be wheeled away from it. Page 791.

WHITE ASSOCIATION MEMBERS IN TEXAS.

So the Texas B.-K. Association thinks it worth while to ordain that members must be white persons. Wonder if they ever suffered, or were in danger of suffering, from persons not white getting too thick. Page 792.

MISS WILSON AND BUTTER-MAKING.

And Miss Wilson tried if she could make a little dab of cream come butter by agitating it in an ice-cream freezer. Enterprising. And we care enough about our department conductors to like to get side views of their personality. Many big churns in common use (those depending mainly upon the gravity of the cream to do the agitating) strike me as sadly and needlessly helpless when cream takes a notion to say, "I won't!" as it often does. "Any old thing" of a churn is tip top when cream in dutiful mood says, "I will." Page 795.



Conducted by MORLEY PETTIT, Villa Nova, Ont.

Be Prepared for Next Bee-Season.

It is a common misconception among those outside the profession that bee-keepers have nothing to do through the winter months. Even many bee-men themselves look forward to the time when the bees are winter-packed, with the idea of being free from all care with regard to them. A summer occupation it is to them. Well, there is something in it. Bees do not require to be fed night and morning, and tended like other stock on the farm, but they need attention, nevertheless.

In the cellar the ventilation requires a certain amount of attention to regulate for changes of temperature. The dead bees require to be cleaned from the hive-entrances, and the floor swept up occasionally. Outside, snow must be cleared from the entrances, and, if possible, covers removed on bright, sunny days to let the packing dry out. All, of course, with as little disturbance to the bees as possible.

But this is a small part of the work. The man who would make the most of the short summer season will make all possible preparations before that time comes. There are certain supplies required to be got ready each year, and they should be provided for as soon as possible after the close of the honey-flow. At that time all is fresh in the mind, and it is much easier to decide on what is required than it will be later. The apiarist knows best then how much of his time the bees have taken, and can form the best idea of how much increase, if any, he desires to make the following season. He can make out his list of requirements—hives to accommodate the required increase; extra supers, if needed (every hive should be allowed at least two supers); frames, sections, foundation, etc.

Increase can be made most profitably by nuclei and ripe cells or queens. At the present price of queens I would advise the specialist honey-producer to patronize the specialist queen-breeder. Of course, there is always some risk of their being damaged in the mail, and on this account, largely, we use good, ripe cells in forming nuclei whenever they turn up in the course of our examinations for swarming impulse; but we find very little time, indeed, for queen-rearing. Queens ordered in quantities can generally be secured at reduced rates, and they should be ordered *now*, to insure their delivery when wanted. The order should be so arranged that a few will come each week, on a certain day of the week, during the swarming season.

Objection is made to investing money in supplies which may not be needed this year. This can not be avoided without running the much more grave risk of seeing the hives overcrowded with honey, the bees idle and swarming, and no supplies ready. We always make it a point to be ready

for the worst—I should say, the *best*. Figure on wintering all the bees we have put into winter quarters, and securing the highest average yield of honey we have ever had. Then buy supplies accordingly.

There are always some cans and barrels left over at the end of the season, but they are good stock for another year. Plenty of storage is the great essential. As far as possible let this storage be the packages in which the honey is to be sold. Don't count on keeping honey in milk-cans and crocks, to be laboriously dug out and melted up before selling. Arrange to run the honey directly from the extractor through a strainer into the package in which it is to be sold.

Another point in preparedness, which very many bee-keepers are prone to neglect, is in the matter of reading. The bee-papers have been coming regularly through the busy season, hastily glanced over, and laid away, with a promise to read them more carefully in winter. It is winter now. What about those bee-papers?

I knew a farmer once who was a great student. He read early and late on science, history, philosophy, until he came to be considered an oracle by his neighbors, and to the outside world a recognized authority on many subjects outside of *farming*. I would rather be well versed in the line of business from which comes my daily bread.

Possibility of Dark Honey or Sugar Syrup in the Brood-Chamber Going into Sections

"York County Bee-Keeper" hits the nail fairly on the head in the following, taken from the Canadian Bee Journal:

"At present quite a controversy is going on over the line relative to the practice of feeding sugar syrup. Mr. Boardman practices feeding just previous to the clover-flow, so that the brood-chamber will be full and all clover honey go into the supers. In a late issue in the American Bee Journal, Editor York advises bee-keepers to make their hives heavy for winter by leaving plenty of sealed combs of dark honey, arguing that the dark honey thus placed will really be equal next season, pound for pound, with light honey."

"Commenting on this, Editor Hutchinson, in the Review, asks bee-keepers to see how much of this dark honey will go into the sections, intimating, of course, that there is not much likelihood of dark honey, or sugar syrup either, going into the supers. Seems to me Mr. Hutchinson is treading on dangerous ground, for surely any practical apiarist knows that if a brood-chamber is full of any kind of honey or syrup (provided the colony has a prolific queen and swarming does not take place), quite a large percentage of this honey or syrup will find its way into the surplus apartments. This is something that any one can test for himself, and if the novice has colonies to go into the clover-flow with the brood-chamber full of buckwheat honey, he may decide that while experience, if a good teacher, it is sometimes a little expensive."

Bees and Alsike Clover

The Hon. Nelson Monteith, Minister of Agriculture, is a bee-keeper. Being a fruit-grower, and seeing the importance of bees to fruit, he became a bee-enthusiast on that account. As to their importance to alsike and buckwheat, the evidence keeps piling up. A few years ago a man came 4 miles to me to have me put bees on his farm for his alsike. He gave a free house for extracting, and board for the men while working at the bees. In the fall he had a good crop of alsike seed, and we had a good crop of honey.

Mr. J. L. Byer, in the Farmers' Advocate, gives his experience thus:

"In addition to growing quite an acreage of alsike clover each year ourselves, we also handle considerable seed for a well-known Toronto firm. Coupling this with our interest in the business from a bee-keeper's view, I suppose there is no exaggeration when I say that we practically know the acreage and individual yields of the different fields of clover within a radius of 3 miles of us each year. In seasons that the acreage is limited, there does not appear to be so much difference in yields, as far as distance from the apiaries is concerned; accounted for, no doubt, by the fact that when pasture is scarce the bees forage over a much greater extent of territory in search of nectar. On the other hand, in seasons when there is a large acreage, the yields

invariably decrease, after a distance of a mile or more is reached.

"While yields of 7 and 8 bushels to the acre are not uncommon in fields near the bees, we have yet to hear of such turnouts of clover any considerable distance from the apiaries. For 7 years our clover has yielded from 6 to 9 bushels to the acre; our nearest neighbors have done about the same. Others living $1\frac{1}{2}$ miles and more from any bees, have had in the same years from 2 to 5 bushels to the acre. As the soil is practically the same in both cases, same methods of culture practiced, etc., I am at a loss to explain the difference, if the bees are left out of the question. These statements will be vouched for by nine out of every ten farmers growing alsike. In fact, I could name men who 10 years ago would laugh at the idea of the bee as something necessary in alsike-growing, who to-day are the most anxious to have bees near their clover-fields. One in particular comes to my mind, who, 2 years ago, offered to haul an apiary from 15 miles away to his place, so that he could have the benefit of them when his clover was in bloom.

"Just a short time ago, while in conversation with that well-known agriculturist, Mr. Simpson Rennie, of Toronto, I remarked that the beet-sugar industry would not prove very tempting to the farmers who are growing alsike. He said, 'We can't all grow alsike; we haven't got the bees.' He was very emphatic about the matter, and stated that neighbors of his had tried again and again to grow alsike for seed, and had always failed. In the section referred to there are probably not half a dozen colonies of bees in the neighborhood. Surely, the testimony of such men should bear some weight.

"Last, but not least, the opinion of the large seed firms should be considered. As they annually handle thousands of bushels of the seed, they should know what they are talking about. I think, without exception, they will say they get the most seed, and of the best quality, from growers who are in close proximity to bees."



Our Sister Bee-Keepers

Conducted by EMMA M. WILSON, Marengo, Ill.

A Hearty Holiday Greeting

to all and singular of the cherished sisterhood. May your Christmas turkey be just the right shade of brown, and may your pies not run over in the oven. May your bees winter successfully, and may you have a good time expecting a big crop of honey next year—whether it comes or not.

To the many who have helped during the past year, by their contributions and by their kind words of encouragement, sincere thanks are due, and are hereby given. Closely coupled with the feeling of thankfulness for the favors of the past is the Oliver Twist feeling of a desire for "more." Perhaps the most interesting hour of the day, "in this locality," is about 9 o'clock in the morning, at which hour the rural delivery man comes along, and when the day's budget is brought into the house the first question always asked by a certain person is, "Anything for me from the sisters?" If any of the sisters are at all solicitous for the happiness of that "certain person," they can make sure to increase it by letting her hear from them often.

Don't wait for some great thing to tell; tell us about the little things. Tell us of your successes, and, equally, tell us of your failures. If you haven't a pen handy, use a pencil. Never mind if you don't know just where to put the commas and other marks—they're good at that sort of thing in Chicago.

Postals and postscripts permitted.

Success to all of you. EMMA M. WILSON.

For Our Consolation and Encouragement

DEAR MISS WILSON:—I send a short poem written by a dear friend of mine, whose life is a living epistle of the love of Christ. She signs herself "Sister Ruth." (Not her real name.) It seems to me that some of us bee-keepers may be consoled by reading this poem. So many of us fail

of the prosperity and success we had worked and hoped for. As I see in the American Bee Journal, from time to time, poems on other subjects than bee-keeping, I would be pleased if you would have this poem published in the Sisters' corner.

SARAH E. WILEY.

Poughkeepsie, N. Y.

Blessed are Ye That Fail

Sometimes I've wished we might these words enroll
Upon the pages of God's Holy Book,
Then, kneeling down by each discouraged soul,
Could simply point to them and whisper, "Look!
"Blessed are ye that fail."

For none fail unless they first have striven;
'Tis he who toils all night, and naught doth take,
Whose heart with dark despair is keenly riven;
And so I wish 'twas written for his sake—
"Blessed are ye that fail."

Is it not written? Not these words we find,
But surely in God's Book we read the thought—
He treasures up the motives of the mind,
And blesses as the will within us wrought,
Tho' outwardly we fail.

Christ came to heal our broken-heartedness;
And who so sore as he who toils in vain?
Whose best endeavors seldom meet success,
E'en tho' he try, and try, and try again?
Then blessed ye that fail.

Aye, blessed, for the very striving leads
The zealous soul into the realm of loss,
Made holy by the One whose loving deeds
Seemed to have ended on the cruel cross.
Aye, blessed ye that fail!

God is too wise to let us oft succeed,
For then we would not keep our lowly place,
And so He lets us feel our constant need
Of His supplies of patience and of grace—
Thus blessing those who fail.

Then, weary one, look not upon the main,
And mourn the wreck of all your toil and care;
If yet upon some broken piece you gain
The haven safely, and are welcomed there,
Blessed are ye that fail.

SISTER RUTH.

Bee-Keeping and Other Things at "Clovernook"

DEAR BEE-KEEPING SISTERS:—So our good Chieftainess thinks you will be interested in hearing some more about "Clovernook," in addition to the clipping she printed recently from that fine magazine, *Suburban Life*.

Well, we began business with some 50 colonies, and a fine outfit for extracted honey, and a nice, large, roomy bee-house, all of which was on the place, and later on we bought from the proceeds of our honey.



At first the colonies dwindled to 31, but by experience (rapidly acquired in a fiery furnace of stings and disappointments) I promptly and speedily ran them up to 80 colonies, the present limit of our pasturage, and we work each year to keep the apiary at about that average.

I have always believed our bees were the very backbone and sinew whereby Clover-nook has succeeded in building up a lucrative plant, even if through many difficulties.

And I must confess that after having had considerable experience in ducks, chickens, turkeys and squabs, besides fruit-raising, during the 10 years' work here, surely bees are away and ahead my most satisfactory branch, from every standpoint but one.

I can't make a living from my 80 home colonies, and I can't add out-lying yards to the plant, for there is no way of visiting them. I'm afraid of breaking my neck in learning to use a bicycle, though in days of yore how I used to ride horses, and skate and dance! During those times a broken neck never bothered me; but when one knows what it would mean to a little, aged mother, I tell you it makes a difference.

I've had three horses—two were ruined, and one I sold to keep her from being ruined, and when she went a vow was mentally registered that Clovernook would never shelter another till time evolved for us as something masculine in hired help that was reliable. Suffice to say this *rara avis* is still "on the wing;" he surely has not yet settled down on Clovernook.

Such being the state of affairs with us, something else had to be added to bees if we were to live independently, and "tuck away" some odd pennies in the "Emergency Stocking." And so, after a brief, exciting, hard trial of "chickens and squabs for broilers," we've settled down now in peace to my bees and duck-raising—with, as a side-issue, about 100 White Wyandotte hens and 8 White Holland turkeys for eggs and breeding stock; though, to be sure, there are a few other odds and ends by which we pick up a few extra pennies. For instance, our apples brought us this fall \$36 in cash, besides having all we could use; from our currant patch we cleared on the jelly about \$100. Of course, we have lovely down from the ducks, netting us about \$100 per season, and the guano that brings \$1 per load. And from the bees, the vinegar and beeswax.

I hope I have demonstrated clearly that it was not by preference that I resigned confining myself strictly to bee-keeping, and why forced by circumstances into the very much more complex paths of poultry-raising. I will, however, in defense of the last, say this: Besides our living expenses and lots spent in general repairs and improvements, there is invested in houses, incubators, brooders, and other poultry appliances, some \$2000, all of which we have raised right here, ourselves. Also, that to-day, with two good helpers, Clovernook can yield us annually between \$2000 and \$4000. We are now equipped for it, and can do it.

Realizing my own limitations, and that there must be others scattered through our land who suffer from similar restrictions, is the reason why I urge that for those, bee-keeping in connection with another rural occupation, may work very successfully in the production of a fair income and independent livelihood.

The little cut at the head of this shows my bee-house, with a lovely good friend and brother standing in the doorway, and my man "Pete," with his barrow and tin carrier filled with combs, starting for the bee-yard. That white splotch between the hives is a flock of my ducks. They refused to "spread out" and have their pictures taken nice, but just "bunched up together" and made themselves disagreeable. "F. E. W.," yours truly, stands at one side equipped for business, with straw hat, bee-veil, big apron, and bee-smoker.

Some time you shall have a picture of my dear ducks, a good one, if it will be allowed in a bee-paper, and I will describe our indoor rigging of the bee-house; but guess you have had enough of Clovernook for this time.

Clinton Co., N. Y.

FRANCES E. WHEELER.



Doctor Miller's Question Box

Send questions either to the office of the American Bee Journal, or to Dr. C. C. MILLER, Marengo, Ill.
 Dr. Miller does not answer Questions by mail.

Bees Dying Seemingly Without Cause

I went to one of my out-yards of 303 colonies the last week of October, and all were in fine condition, with lots of old stores, and the woods all turning white with aguineldo and various other good honey-producing flowers. So I pitched in, and in a few days I put on 185 supers; then my business called me in other apiaries, and it was 4 days before I went back to put on some more supers, and to my surprise I found the bees carrying out other bees and kill-

ing them after getting them out. So I thought I would wait and see how this would turn out. Three days later I went back and found the whole apiary still at the killing, and dead bees from 1/2 inch to 2 inches deep in front of the long rows of hives, and the bees that remained alive seemed so scarce in November that they have suspended business in the way of storing honey. Some of these same hives had lots of bees hanging out in front and at the bottom when this trouble began, and now I can't see one pass out or in oftener than one or two a minute. It can't be on account of hunger, for they are all quite heavy, and with lots of good, healthy brood, which I fear may get chilled if we should have a cool night.

In my home yard of 225 colonies, only 2 1/2 miles from the fatal yard, I never saw bees do better. I also have another yard of 400 colonies about 6 miles from the fatal one, and they are doing well, too. Can you point out a remedy or a preventive if I should have any more of this kind of trouble? As I have told you in a previous letter, I have handled bees for many years, and this is a new wrinkle to me.

Our weather is quite favorable (Nov. 30), and our prospects are flattering for lots of honey this season.

CUBA.

ANSWER.—I don't know enough to make even a guess at the cause or cure, so submit the case to "the constituency," begging that any one able to help out will be kind enough to do so.

Late Gathering of Honey and Pollen

About Oct. 1, I found a small swarm of bees on a bush. I took pity on them and put them in an old hive on 3 empty frames, and put some old boxes of honey in the bottom, then closed the entrance all but a bee-space.

In about a week I looked at them and they were building comb, and, to help them out, I put in 5 full frames of capped honey, practically every cell full. I soon discovered that they were gathering pollen every pleasant day, and they are still at it, although we have had one snow-storm and several freezes. The pollen is bright orange in color, and tastes like the pure stuff.

1. Where do they get it?

2. Why do they gather it so late, when not another colony in my yard does?

Last Wednesday (Nov. 22) the bees were coming in loaded, and working hard. It rained hard all day yesterday, but it has cleared up again, and I shall watch them close, and see just how late they will bring it in. They have brood, eggs, and larvæ in all stages. I have a good cellar all ready for my bees, and shall put them in as soon as it seems necessary. Bees here have all been breeding so late that they must be in fine condition for winter, and we look for good results next year. Our surplus was pretty light this year.

IOWA.

ANSWERS.—1. I don't know. More than that, I don't know where my own bees get pollen so late in the season that there is no longer anything in bloom that I know of, but of course something is in bloom, for there's no question as to the loads of pollen. I must modify that statement enough to say that I do know of one thing that has not ceased to bloom from early spring, and is still showing blooms more or less imperfect in December—dandelion. The late pollen carried in by the bees, however, doesn't look exactly like dandelion, yet the lateness of the season may account for a little difference in color.

2. It is not improbable that the combs you gave them contained no pollen. Your other colonies have a good stock of pollen on hand, and feel no great need to hustle for more, but this colony, if it is without pollen, is in a somewhat desperate condition, for without pollen no brood can be reared either fall or spring. Having a fanatic desire for pollen, no wonder they skirmish around lively for it when other colonies show little care for it.

Making Candy for Winter Feeding

What is the best way to make candy? I have fed syrup, but did not get it done until late, and I am afraid the bees will be short of stores before spring. I winter them in the cellar.

IOWA.

ANSWER.—You will not be far out of the way if you make it just as you would make any candy for the children, only you must be more careful about scorching it, for

although burnt candy doesn't hurt children seriously, it means death to bees if given for winter stores. For every 3 pounds of sugar take a pint of water. When the water is boiling hot, sift in the sugar slowly, stirring it as you sift

it in, so it will not burn on the bottom before it is dissolved. Try it from time to time, and as soon as a little of it dropped into cold water becomes brittle, take off and pour into greased dishes, making cakes $\frac{1}{4}$ to 1 inch thick.

A FRESH HATCH EVERY DAY



"CONTINUOUS" HATCHER

By a simple but effective mechanical arrangement and a new application of nature's laws the "CONTINUOUS" HATCHER makes it possible to keep up a continuous hatching of chicks from one machine—A FRESH HATCH EVERY DAY. Removing chicks from machine and replacing them with fresh eggs does not interfere with or retard process of incubation. This is possible with no other incubator. One

will hatch as many chicks as several ordinary incubators. Simple, effective, sure. Free catalog tells how. Write for it today. Hacker Incubator & Mfg. Co. 3127 N. Jefferson Ave. St. Louis, Mo.

Mention Bee Journal when writing.

Glass Jars for Honey

We can ship by return freight at the following prices:

$\frac{1}{2}$ -lb. Tip-Top Jars—case of 24 doz., \$8.00; 3 cases, \$23.00.

$\frac{3}{4}$ -lb. Tiptop Jars—1 case of 14 doz., for \$5.25; 3 cases for \$15.

1-lb. Tiptop Jars—1 case of 12 doz., for \$5; 3 cases for \$14.

Second Hand... Comb Foundation Mill

We have for sale a 6-inch Second-Hand Comb Foundation Mill. Used scarcely any; good as new. If interested write for price.

50 boxes good 2nd-hand 5-gal. Tin Cans, 2 in a box—10 boxes for \$4.00.

When sending for sample jars include 15 cents each to cover postage, etc.

YORK HONEY AND BEE CO.

(Not Incorporated)
141 Ontario Street, CHICAGO, ILL.

The Rietsche Press

Made of artificial stone. Practically indestructible, and giving entirely satisfactory results. Comb foundation made easily and quickly at less than half the cost of buying from the dealers. Price of Press, \$1.50—cash with order. Address,

ADRIAN GETAZ,

454tf KNOXVILLE, TENN.
J. G. Goodner, of this State, writes me that he "prefers to pay \$25 for a Rietsche Press than do without it."—A. G.

Christmas Holiday Excursion Rates

via the Nickel Plate Road between Chicago and Buffalo. Dates of sale Dec. 23, 24, 25, 30 and 31, 1905, and Jan. 1, 1906, at a fare and a third for the round-trip, with return limit of Jan. 3, 1906. Through train service to New York City, Boston, and other Eastern points. No excess fare. Individual Club Meals served in Nickel Plate dining cars. Three through trains daily from La Salle and Van Buren St. Station. The only depot in Chicago on the Elevated Loop. 39—49A3t

40-Page Catalog Free!

Full information regarding all kinds of BEE-KEEPERS' SUPPLIES. Best goods. Latest improvements. Danzenbaker Hives and Fixtures. Prompt shipments. JOHN, NEBEL & SON SUPPLY CO., High Hill, Mo.

Please mention Bee Journal when writing advertisers.

Reports and Experiences

Bees in the Cellar

I put my bees into the cellar Oct. 28, but it warmed up again, so I think I made a mistake by putting them in so early. I had 65 colonies, spring count, and got about 2000 pounds of honey from them. We have about a foot of snow here now. CHAS. J. MILLER.

Long Prairie, Minn., Dec. 2.

Results of the Past Season

I have put 63 colonies into winter quarters. They did fairly well the past season, as I got 3500 pounds of honey from them. I run for comb honey only. I don't lose very many colonies in winter, as I winter them on the summer stands packed with chaff cushions, and have a row of evergreen-trees on three sides to protect them from the cold winds, and it works very nicely. EDW. MCCOY.

Lima, N. Y., Dec. 8.

Bees Did Poorly

Bees did not do well here this year. There was no horse-mint in the spring, nor broom-weed in the fall—nothing but cotton to work on; while this was a fine quality of honey, it amounted to only about 35 pounds per colony, on an average (two-thirds comb). This country is nearly all under cultivation, consequently cotton is our main honey-plant. I came out in the spring with 35 colonies, hived 18 prime swarms, and now have 31. I lost heavily in early summer.

I sold what honey I had to spare for 10 cents per section, and 75 cents per gallon for extracted. One thing is strange to me, if I were to ask \$1.00 a gallon for honey I don't believe I could sell a single gallon; but after I sold what I had to the merchants here, they had no trouble in getting \$1.25 and \$1.50 per gallon for it. F. R. KNAUTH.

Granger, Tex., Dec. 4.

Bee-Keeping in the South

I will try to say something relative to apiculture in the South. I can not understand, except in a meager way, what bee-keepers in the North mean by "wintering bees." I have been told that it is very cold there, that you have snow and ice, and that you have to protect your bees in order that they may live through, and then many are lost, and you have "spring counts." I don't know what this means. I never saw but one snow in my life of any importance, and it was 4 inches deep on a level, and lasted one day. The thermometer showed 12 degrees above zero. Half the winters here the mercury never reaches as low as 12 degrees. I have seen several winters where the mercury never fell below 28 degrees. Three times in my life I have eaten watermelons on Christmas, and once I consumed one in February of the previous year's crop. Isn't this delightful for the apiarist?

Twice in my life I have seen the mercury as low as 2 degrees above zero. I had on so much covering that I could not turn over, and still froze on the edges. I had to cover up my head to save my nose. When I arose the next morning I "smoked" all over like a leaky stove, and my knees quaked like a bone-yard. I thought that I never would get into my pants, and when I did they seemed to be entirely too thin, much more so than usual. This was fearful on me, but never seemed to bother my bees. I beg pardon for the above digression.

Here in Texas we leave our hives just as

they were when we last "robbed" them; at least I do. I extract out the last honey the last of October, or by Nov. 15, and return the combs to the hives just the same as if I were expecting another honey-flow. No further attention is paid to the bees except to walk through the yard occasionally to see if none of the covers have blown off.

The bees bring in pollen every month in the year. I have seen them toddling in rapidly on Christmas day, laden with pollen. I never made any investigations to see whether or not they brought in any honey. Cotton and mesquite are my principal honey-bearing plants here in Bell Co., Texas, and from them we get enormous yields, sometimes.

As yet I never have had any disease among my bees except paralysis, and that not serious; and I have operated bees 20 years. From what I can learn, foul brood is practically unknown in the State. It is honey here with practically no labor attached. Last year (1904) I put in 26 days' work, all told, for operating and "robbing," and hired one hand two days, and took off over 3000 pounds of honey. Nearly half this time was consumed in transferring a few colonies and straightening combs and building up weak colonies, the weak ones being those that I had found. We have as many colonies in the spring as we do in the fall—never lose one except through failure of the queen. T. P. ROBINSON.

Bartlett, Texas.

Imbedding Wires in Comb Foundation by Heat

MR. EDITOR:—While thanking Mr. Adrian Getaz for his desire to credit me with the invention of the plan of imbedding wires in foundation by the use of heat, I must disclaim all right to such credit. The credit belongs to one of the sisters, Miss Emma M. Wilson, who first conceived the idea of using a lamp or gasoline stove to heat the wires. Then I think it was The A. I. Root Co. who varied the plan by using electricity. Not every one can conveniently use electricity, but a gasoline stove, oil stove, or a lamp, is easily accessible.

The illustration on page 842, shows an improvement that I suppose is the invention of Mr. Getaz—having the frame supported by wires suspended from above. That's easier than to hold the frame in the hand, and the proper distance from the lamp is thus automatically gauged.

One who has never tried it may think that there is danger of spoiling the foundation by melting it. As a matter of fact the heat of the lamp has very little effect on the wax, and it would work just as well if no direct heat touched the wax. Remember that the wire is under the wax. The wire is one of the very best conductors of heat, wax one of the poorest. So the wire becomes heated immediately, and a slight pressure from above melts its way into the wax before any other part of the wax has found out that any heat is present. C. C. MILLER.

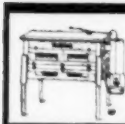
Marengo, Ill.

Farm and Stock is an illustrated monthly magazine in the interest of CORN BREEDING, Cultivation and Live Stock. Price \$1 a year, but for a short time will be sent a year on trial for 10c and names of ten farmers who grow corn. Farm & Stock, 228 Charles, St. Joseph, Mo. Mention Bee Journal when writing.

85c for 15 NAMES For names and P. O. of 15 farmers and 15c stamps taken—we will send for 2 yrs. the Farmer's Call—reg. sub. price 50c a year. F. C. is a wkly., 25 yrs. old, 1,200 pages a yr. Sample free. Farmer's Call, Quincy, Ill. Mention Bee Journal when writing.

"It is continuous advertising that impresses the public with the stability of a firm."

BANTA Incubators & Brooders



Backed by 14 Years of Successful Use by poultrymen all over the world. No guesswork. They are automatic in regulation and ventilation. Fully guaranteed to give YOU satisfaction. Send for free book. **BANTA BENDER MFG. CO., Dept. 24, Ligonier, Ind.**

Mention Bee Journal when writing.

EGG MAKING

is a hen's natural work. Cut bone is the raw material she needs to make her lay an egg a day. A **CROWN BONE CUTTER** will prepare the food from scrap bones quickly, easily. Write for catalog—tells about the Crown. **Wilson Bros., Box 618, Easton, Pa.**

Mention Bee Journal when writing.

How to Organize

A Farmers' Telephone Co.



We have published a very instructive telephone book especially for the man who wants to know ALL about telephone matters. It tells how to organize, how to build the lines; about different types of phones, construction; gives by-laws, and constitutions; in fact it is a telephone encyclopedia every farmer should have. We send it free if you mention this paper. Ask for Book 80C, "How the Telephone Helps the Farmer." You will get it by return mail. Address nearest office.

Stromberg-Carlson Tel. Mfg. Co.
Rochester, N. Y.—Chicago, Ill.

Mention Bee Journal when writing.

Special Sale on HIVES AND SECTIONS

Until March 15. Dovetail Hives, 8-frame, 1 1/2-story, 1.25; 10-frame, \$1.40; No. 1 bee-way Sections, 3.90; No. 2, \$3.40; 24-lb. Shipping-Cases, 13c; Foundation, Smokers, etc., cheap. Send for 24-page Catalog free.

W. D. SOPER,

Rural Route 3, **JACKSON, MICH.**
43Dtf Please mention the Bee Journal.



THE DANDY BONE CUTTER

will double your egg yield. Thousands of poultry raisers say so. It costs less, turns easier, cuts faster and lasts longer than any other. Price \$5.00 up. **Sold on 15 Day Free Trial.** Send for book and special proposition.

STRATTON MFG. CO.,
Box 21, **Erie, Pa.**

Mention Bee Journal when writing.

The Best Fruit Paper

is The Fruit-Grower, published monthly at St. Joseph, Mo. The regular subscription price is a dollar a year but if you will write for free sample copy and mention this paper, you will receive a proposition whereby you may secure it one year WITHOUT COST. Every one who has a few fruit trees or a garden, should read

THE FRUIT-GROWER

ST. JOSEPH, MISSOURI

Every issue is handsomely illustrated and from 32 to 64 pages a month are filled with interesting matter pertaining to fruit-growing and gardening. The first four issues of 1906 will be handsome special numbers devoted to the following subjects: January, The Horticultural Societies; February, Spraying; March, Gardening; April, Small Fruits. Any one of these numbers will be worth a dollar to you. We publish the "Brother Jonathan Series" of fruit books. Send your name and **BRO. JONATHAN** learn how to secure these books free.

Fruit-Grower Co., 107 S. 7th, St. Joseph, Mo.

\$4.60 FOR THIS "ECONOMY" BOILER AND FEED COOKER



The "Economy" Feed Cooker is the best built cooker on the market today. It is constructed so as to get the very best results from the smallest amount of fuel possible. The kettle is well and strongly made of the smoothest cast iron, and has a handle on each side so that it can be removed from the casing instantly. Will last a lifetime. The casing, or jacket, is one continuous sheet of cold rolled boiler steel, supported at the bottom by a heavy wrought iron band. This cooker has the largest fire door of any made, and is the strongest, most serviceable feed cooker ever sold at such a price, freight paid. Made in seven sizes to suit every need; furnished with hinged cover, elbow and one length of pipe with damper. We guarantee this cooker for one year. Send money with order today, or write for our large 1,000-page catalogue giving other sizes and thousands of money-saving bargains for the farmer and his family.

If you want to save 10 per cent on everything you buy, we have a plan you should know about; it will save you from \$50 to \$250 a year. Only costs a stamp to find out all about it.

The object of this Society is to save money for its members. For full information let us tell you how we do it.
Co-Operative Society of the National Supply Co.
Lansing, Michigan Chicago, Illinois

All About California

The Pacific Rural Press has been a household word throughout California for 35 years. It is authority on all matters regarding the soil or products of California. Weekly, illustrated; Edited by practical specialists. Two Dollars per year. Send for sample copy.

Pacific Rural Press,

330 Market Street, **SAN FRANCISCO, CALIF.**
50Atf Please mention the Bee Journal.



BINGHAM
Original
Direct Draft
CLEAN
Bee Smokers

4 Largest Sizes Soot Burning
Never Go Out
And last from 5 to 25 years

Tin 4-in. Sm. & Engine 3 1/2-in. 2 1/2-in. 2-inch Wonder
\$1.50 \$1.10 \$1.00 90c 65c—per mail.
Sent on receipt of price per mail.
T. F. BINGHAM Farwell, Mich.

OTISVILLE, PA., Jan. 18, 1904.

Dear Sir:—I have tried almost everything in the smoker line; 3 in the last 3 years. In short if I want any more smokers your new style is good enough for me. I thank the editor of Review for what he said of it. Those remarks induced me to get mine. **FRED FODNER.**

Mention Bee Journal when writing.



Mention Bee Journal when writing.

WE SELL ROOT'S GOODS IN MICHIGAN
Let us quote you prices on Sections, Hives, Foundation, etc., as we can save you time and freight. **Beeswax Wanted for Cash.**
M. H. HUNT & SON,
BELL BRANCH, WAYNE CO., MICH



THIS IS THE LOCK

corner that we have told you about, and as you will see it can't warp nor split off as it passes by and nails firm to the side. Prices right—quality right—workmanship right.

Our discount discounts everything. Postal gets a circular.

The Wood Bee-Hive & Box Co.
LANSING, MICH.

39Dtf Please mention the Bee Journal.

THE COUNTRY GENTLEMAN

ESTABLISHED 1831
The ONLY Agricultural NEWSpaper,
AND ADMITTEDLY THE
Leading Agricultural Journal of the World.

Every department written by specialists, the highest authorities in their respective lines. No other paper pretends to compare with it in qualifications of editorial staff. Gives the agricultural NEWS with a degree of completeness not even attempted by others.

INDISPENSABLE TO ALL COUNTRY RESIDENTS WHO WISH TO KEEP UP WITH THE TIMES.

Single Subscription, \$1.50;
Two Subscriptions, \$2.50;
Five Subscriptions, \$5.50.

SPECIAL INDUCEMENTS TO RAISERS OF LARGER CLUBS.
Four Months' Trial Trip 50 cents.

SPECIMEN COPIES
will be mailed free on request. It will pay anybody interested in any way in country life to send for them. Address the publishers:

LUTHER TUCKER & SON,
Albany, N. Y.

Please mention Bee Journal when writing Advertisers.

OAK
HEATER

\$3.90

STOVES
FREIGHT PAID

We are the largest stove dealers in this country selling direct from the foundry to the purchaser **FREIGHT PAID**. Our immense stove business is all done by mail, and is built on the solid foundation of **satisfaction or money back** in every case. Every stove we sell is fully warranted and broadly guaranteed, and the purchaser must be satis-

HARD
COAL
BASE
BURNER

\$19.95

fied in every particular or the purchase price will be refunded. Before you buy a stove send for our large free 1,000 page merchandise catalog. It contains hundreds of **handsome stove bargains** not to be found anywhere else. No matter what sort of a stove you want we have it, and our price—**freight paid**—will lay it down at your depot cheaper than you can buy it from your home dealer, or anyone else. And our guarantee makes you safe. You may order any stove shown in this advertisement or in our large catalog; if it isn't **just as we claim**, ship it back; we will pay freight charges and you won't be out a cent by the deal. Hundreds of farmers have purchased stoves from us and have all been

AIR TIGHT
HOT
BLAST

\$8.25

more than pleased with their bargains and recommend us to their neighbors—that's the secret of our rapid growth. You will do the same. When you buy a stove of us you know just what it is going to cost you; you send the amount of the purchase price and we deliver it to your station,—you simply haul it home. If you don't find a stove in this advertisement that suits you, **send for the catalogue**; it is the greatest buyers' guide published; it will show you an easy way to **save money** on

all your household supplies—tells how to make every dollar that you spend do more than double duty.

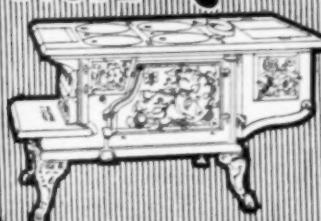
STEEL RANGE



\$11.98

If you want to save \$150 to \$250 a year, ask us for full particulars about our special money-saving plan—there's a 10 per cent off list price on everything you buy by this plan. Write for it today.

Co-Operative Society of the National Supply Co.
Lansing, Mich. Chicago, Ill.

COOK
STOVE \$7.75

Mention Bee Journal when writing.

87½ Percent Saved

In mortality to those insured in the
TOTAL ABSTINENCE DEPARTMENTOF—
Security Mutual Life Insurance CompanyEACH POLICY HOLDER is entitled to a Bond issued by the
National Total Abstinence League.

YOU may hold a policy and BOND.

General and special agents wanted. Address,

3D28t A. S. RENNIE, Mgr., 614 Marquette Bldg., Chicago, Ill.

Bargain in Bee-Supplies

On account of removing from the city, I wish to sell at once the list of bee-supplies given below. Will sell the lot at less than one-half the present retail prices as shown by Root's catalog. They certainly are a big bargain.

- 7—8-frame hive-stands
- 2—8-frame wood-zinc boards
- 2—Danzonbaker Hive covers
- 3—Reversible hive-bottoms
- 9—10-frame dovetailed supers
- 5—10-frame dovetailed winter cases
- 24—8-frame dovetailed supers
- 9—8-frame dovetailed extracting-supers
- 2—10-frame dovetailed hives
- 3—8-frame dovetailed hives

- 75—M fences
- 1—Danzonbaker bottom and detachable alighting-board
- 10—8-frame hive-covers
- 16—Hoffman top-bars
- 800—4x5x13 sections (new)
- 7—Miller feeders
- 2—8-frame bee-escape boards
- 25—8-frame hives (new)
- 25—8-frame 2P supers (new)

500 plain sections (new)

\$40 will take the lot if ordered at once.

For further particulars, address, MISS M. A. CALDWELL, Morton Park, Ill.



FRUIT BOOKS FREE

Send your name and address at once and you will receive by return mail sample copies of the BEST FRUIT PAPER and full particulars about the "Bro. Jonathan Fruit Books," which may be secured free.

FRUIT-GROWER COMPANY

42 SOUTH 7TH STREET, ST. JOSEPH, MO.

Mention Bee Journal when writing.

Very Low Excursion Rates for Christmas Holidays

to all points on the Nickel Plate Road between Chicago and Buffalo. Dates of sale Dec. 23, 24, 25, 30 and 31, 1905, and Jan. 1, 1906, with limit returning Jan. 3, 1906. Rate one and a third fare for the round-trip. Individual Club Meals ranging in price from 35 cents to \$1.00, and Mid-Day Luncheon 50 cents, served in Nickel Plate dining cars; also service a la carte. No excess fare. Chicago city ticket offices, 111 Adams St. and Auditorium Annex. Depot, La Salle and Van Buren Sts. The only depot in Chicago on the Elevated Loop. 40—49A3t

Do You Want a South Dakota Paper?

Tells of great land values, of business opportunities, of a State where more railroad building is going on than in any other State in the Union. **South Dakota Farmer** is issued every week. Price, \$1 per year.

SPECIAL OFFER—Send this ad with 35 cents for a year's subscription. Address, SOUTH DAKOTA FARMER, Sioux Falls, S. D.

51A10t Please mention the Bee Journal.

Lowest Prices

Big Discount for Early Orders

On Cash Orders

Before November 1.....	9 percent
" December 1.....	8 "
" January 1.....	7 "
" February 1.....	6 "
" March 1.....	4 "
" April 1.....	2 "

Bee=Supplies

OF ALL KINDS

Established Nearly 25 Years

We have published THE AMERICAN BEE-KEEPER for 15 years (monthly, 50c a year.) The largest and best illustrated magazine of its kind for the price published. Edited by two of the most experienced bee-keepers in America.

Sample copy free.

Our large, illustrated Price-List of Supplies free on application. Address,

The W. T. Falconer Mfg. Co.
JAMESTOWN, N. Y.

Mention Bee Journal when writing.

Honey and Beeswax

CHICAGO, Dec. 6.—The trade in best grades of white comb honey has been fair, yet retailers taking only small quantities at a time. This honey brings 14@15c; other grades are difficult to place at from 10@3c per pound less. Extracted selling at 7@7½c per pound for white; amber 6½@7c; dark 5½@6c. Beeswax, when clean and of good color, 30c. R. A. BURNETT & CO.

CINCINNATI, Nov. 24.—The demand for comb honey is relaxing to some extent, owing to the majority of the trade being well supplied. All fears of a comb honey famine have been allayed. We quote fancy white comb honey at 14@16c. Extracted honey is in fair demand. Quote amber at 5½@6½c, according to the package and quality. Fancy white and white clover extracted at 6½@8½c. We are paying 28½c per pound delivered here for choice yellow beeswax. (We wish to call the attention of the producer to the above honey quotations, who mistakably expects to receive these prices for his product. The above are our selling prices.)

THE FRED W. MUTH CO.

TOLEDO, Oct. 17.—The honey market remains firm, with good demand, and prices the same as last quotations. Fancy white comb brings 15c; No. 1, 14c; fancy amber, 13c; buckwheat, 13c. Extracted, white clover, in barrels, 6½@6¾c; amber, in barrels, 5@5½c; in cans, 1c to 1½c higher. Beeswax in good demand, 26c cash, 28c trade. GRIGGS BROS.

ALBANY, N. Y., Nov. 8.—Our honey market is in healthy condition; demand good; receipts about equal to demand. Prices are not quite as high as last year, but the tendency has been to work off the honey before cold weather, and we think the crop has come forward more than usual this season, which is a good sign. We quote: Fancy white clover, 15c; A No. 1, 14c; No. 1, 13c; buckwheat, fancy, 13c; A No. 1, 12c; No. 1, 11@12c; straight buckwheat is wanted in this market. Extracted, quiet; white, 7½c; mixed, 6½c; buckwheat, 6½c. Beeswax scarce at 30c. H. R. WRIGHT.

PHILADELPHIA, Nov. 20.—The demand has been very good for honey in the past 10 days. In fact, it takes a little sharp, cool weather to get people started, and when they do start, the

Headquarters for Bee-Supplies

Complete stock for 1905 now on hand.
Freight rates from Cincinnati are the lowest,

ESPECIALLY FOR THE SOUTH, AS
ALL FREIGHT NOW GOES
THROUGH CINCINNATI.

7 Percent Discount

For Cash Orders Received in

DECEMBER

This applies to all goods with exception of Shipping-Cases and other Honey-Packages for current use.

C. H. W. WEBER

Office and Salesrooms, 2146-48 Central Ave. Warehouses, Freeman and Central Aves.

demand continues for some months. We would say, now is the height of the honey season. We quote, in a jobbing way: Fancy comb, 15@17c; No. 1, 13@15c; amber, 12@13c. Extracted, fancy white, 7@8c; amber, 6½c. Beeswax firm at 28c. We are producers of honey and do not handle on commission. Wm. A. SELSER.

INDIANAPOLIS, Dec. 15.—There is a tendency for higher prices on best grades of honey. The demand for strictly fancy white comb honey exceeds the supply. Demand for lower grades of comb honey not good. Numerous shipments of honey arriving, but no one producer seems to have very great quantities to offer. I quote fancy white at 15@16c; No. 1 in poor demand at 12c, and amber dull at 10c. Best grade extracted brings 8@9c in 60-lb. cans; amber slow at 6c. Beeswax, 30@33c. WALTER S. POWDER.

DENVER, Nov. 11.—No. 1 white comb honey, per case of 24 sections, \$3.35; No. 1 light amber, \$3.00; No. 2, \$2.50@3.00. Extracted honey, 6½@7 cts. per pound. Supply is light and we could make quick sales of consignments at above figures. We pay 24c for clean, yellow beeswax delivered here.

THE COLO. HONEY-PRODUCERS' ASSN.

CINCINNATI, Nov. 17.—The nice weather holds back the demand for comb honey. Crops seem to be exceedingly short and producers in the West keep the prices high. We quote as follows: Fancy water-white and No. 1 white clover, 14@16c; No. 2, 12@14c. Extracted seems to be more plentiful, and we quote same in barrels, light amber, 5½@5¾c; in cans, ¼c more; white clover, 7@8c. Beeswax, 28@30c.

C. H. W. WEBER.

NEW YORK, Dec. 6.—The demand for comb honey continues to be fair for all grades. Prices practically remain the same. We quote fancy white at 14@15c; No. 1 at 13c; No. 2 at 12c, and buckwheat at 10c per pound. Extracted honey is in good demand, especially California honey with large supplies. We quote white at 6½@7c; light amber at 6c; buckwheat, extracted, at 5½@6c per pound; Southern at 50@60c per gallon. Beeswax firm and steady at 29@30c per pound. HILDRETH & SEIGELKEN.

SAN FRANCISCO, Dec. 6.—White comb, 1-lb. sections, 9@10 cents; amber, 7@8c. Extracted, waterwhite, 4½@5c; white, 4½@4¾c; light amber, 4@4½c; amber, 3½@4c; dark amber, 3@3½c. Beeswax, good to choice, light, 26@27c; dark, 24@25c.

Honey is being offered more freely at appearing quotations than for some weeks past, and it now appears that growers are awakening to the fact that they can not force prices any higher by holding their honey. At these figures there should be a good profit to the bee-men and a small margin to jobbers. Hawaiian extracted amber is selling at 2½ cents, at primary points, but it is not likely that California apiarists have anything to fear from competition, as their crop is all marketed in England.

85c for 15 NAMES

For names and P. O. of 15 farmers and 15c — stamps taken — we will send for 2 yrs. the Farmer's Call — reg. sub. price 50c a year. P. C. is a wkly., 25 yrs. old, 1,200 pages a yr. Sample free. Farmer's Call, Quincy, Ill.

Mention Bee Journal when writing.

FANCY WHITE EXTRACTED HONEY

CRATES 2-60 LB. CANS; 8c

TWO OR MORE CRATES; 7½

LARGER LOTS; WRITE FOR SPECIAL PRICES. ALL F. O. B. CINCINNATI. CASH WITH ORDER. SAMPLES 10c. TO PAY POSTAGE.

THE FRED W. MUTH CO.

No. 51 WALNUT STREET, CINCINNATI, OHIO.
SEND FOR CATALOG OF BEE SUPPLIES WITH SPECIAL DISCOUNT.

FOR SALE

Extracted Honey—Fancy white, 7c; fancy amber, 6½c; ¼c less in 5-case lots or more.

C. O. CLEMONS & CO.

451tf

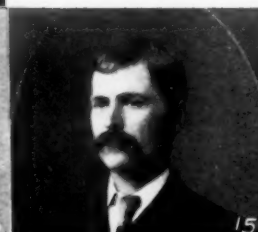
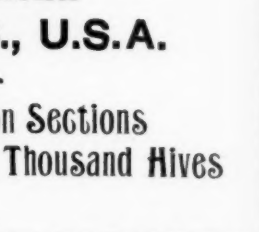
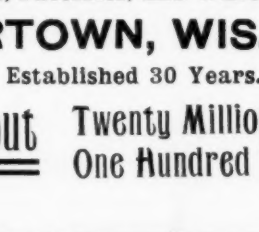
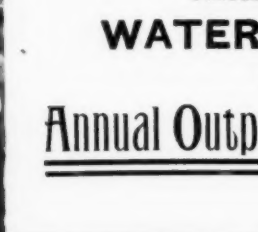
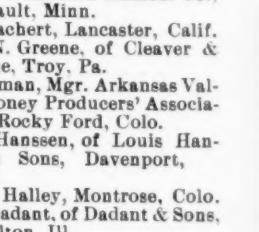
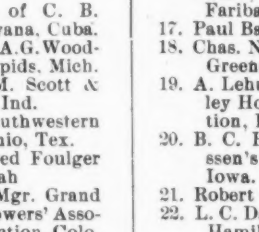
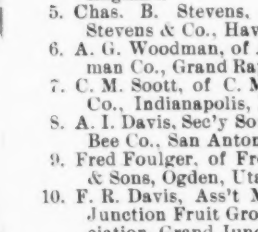
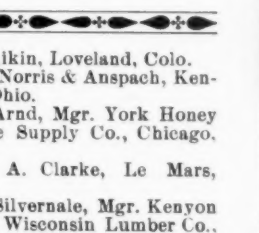
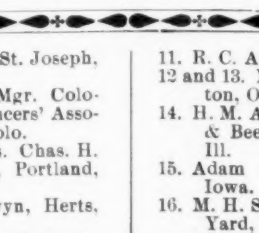
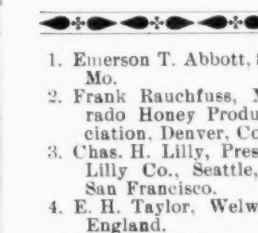
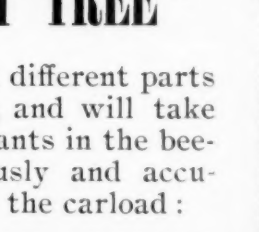
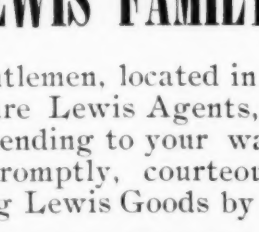
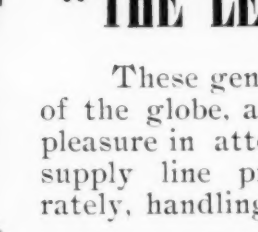
KANSAS CITY, MO.

HONEY AND BEESWAX

When consigning, buying or selling, consult

R. A. BURNETT & CO.,

199 SOUTH WATER ST. CHICAGO, ILL.



BRANCHES

—OF—

"THE LEWIS FAMILY TREE"

These gentlemen, located in different parts of the globe, are Lewis Agents, and will take pleasure in attending to your wants in the bee-supply line promptly, courteously and accurately, handling Lewis Goods by the carload:

1. Emerson T. Abbott, St. Joseph, Mo.
2. Frank Rauchfuss, Mgr. Colorado Honey Producers' Association, Denver, Colo.
3. Chas. H. Lilly, Pres. Chas. H. Lilly Co., Seattle, Portland, San Francisco.
4. E. H. Taylor, Welwyn, Herts, England.
5. Chas. B. Stevens, of C. B. Stevens & Co., Havana, Cuba.
6. A. G. Woodman, of A. G. Woodman Co., Grand Rapids, Mich.
7. C. M. Scott, of C. M. Scott & Co., Indianapolis, Ind.
8. A. I. Davis, Sec'y Southwestern Bee Co., San Antonio, Tex.
9. Fred Foulger & Sons, Ogden, Utah.
10. F. R. Davis, Ass't Mgr. Grand Junction Fruit Growers' Association, Grand Junction, Colo.
11. R. C. Alkin, Loveland, Colo.
- 12 and 13. Norris & Anspach, Kenton, Ohio.
14. H. M. Arnd, Mgr. York Honey & Bee Supply Co., Chicago, Ill.
15. Adam A. Clarke, Le Mars, Iowa.
16. M. H. Silvernale, Mgr. Kenyon Yard, Wisconsin Lumber Co., Faribault, Minn.
17. Paul Bachert, Lancaster, Calif.
18. Chas. N. Greene, of Cleaver & Greene, Troy, Pa.
19. A. Lehman, Mgr. Arkansas Valley Honey Producers' Association, Rocky Ford, Colo.
20. B. C. Hanssen, of Louis Hanssen's Sons, Davenport, Iowa.
21. Robert Halley, Montrose, Colo.
22. L. C. Dadant, of Dadant & Sons, Hamilton, Ill.

G. B. LEWIS CO.

Manufacturers Bee-Keepers' Supplies

—of—

Offices, Factories, and Warehouses

WATERTOWN, WIS., U.S.A.

Established 30 Years.

Annual Output **Twenty Million Sections**
One Hundred Thousand Hives